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(54) **ADENO-ASSOCIATED VIRUS
COMPOSITIONS HAVING INCREASED
BRAIN ENRICHMENT AND/OR HEART
ENRICHMENT**

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(57) **ABSTRACT**

Described herein are compositions and kits comprising recombinant adeno-associated viruses (rAAVs) with increased transduction enrichment in the brain, heart, or brain and heart. The rAAV compositions described herein encapsidate a transgene, such as a therapeutic nucleic acid. Gene therapy using the rAAVs is described. Also described are methods of treating brain-related and heart-related diseases and conditions.

Specification includes a Sequence Listing.

**ADENO-ASSOCIATED VIRUS
COMPOSITIONS HAVING INCREASED
BRAIN ENRICHMENT AND/OR HEART
ENRICHMENT**

BACKGROUND

[0001] Recombinant adeno-associated viruses (rAAVs) are widely used as vectors for gene delivery in therapeutic applications because of their ability to transduce both dividing and non-dividing cells, their long-term persistence as episomal DNA in infected cells, and their low immunogenicity. These characteristics make them appealing for applications in therapeutic applications, such as gene therapy. However, there is a need to significantly improve the performance of existing AAV serotypes to selectively and efficiently express in distinct cell-types, upon systemic delivery to a subject. This need is especially acute when the AAV must be expressed in the brain or heart.

SUMMARY OF THE INVENTION

[0002] Disclosed herein are rAAVs with peptide insertions and substitutions engineered into the capsid structure through iterative rounds of selection in non-human primates (NHPs), yielding variants having increased transduction when measured in the brain, heart, or brain and heart relative to the wild type rAAV on which the variant is based.

[0003] The present invention provides rAAVs with widespread transduction to the brain, heart, or brain and heart. Following IV injection, unmodified rAAVs such as those derived from AAV9 (SEQ ID NO: 1) may not have sufficient tissue enrichment to treat many human diseases by delivery of an AAV cargo. Directed evolution of AAV9 as described herein has provided modified rAAVs that exhibit increased viral tissue enrichment in the brain. Accordingly, engineered rAAVs described herein are particularly useful in delivering DNA cargo to brain tissue and/or heart tissue.

[0004] The present invention provides a mutant Adeno-Associated Virus (AAV) capsid protein comprising at least 95% sequence identity to the wild-type AAV capsid protein, wherein the mutant AAV capsid protein comprises a sequence selected from the group consisting of SEQ ID NO: 2-1496.

[0005] The mutant AAV capsid protein may comprise a 7-mer amino acid insertion sequence located between residues 588 and 589 in relation to the wild-type AAV capsid protein. The mutant AAV capsid protein may comprise at least a 95% sequence identity to the wild-type Adeno-Associated Virus serotype 9 (AAV9) capsid of SEQ ID NO: 1. In the AAV9 capsid, the amino acids immediately preceding the 7-mer amino acid insertion sequence are -AQ-. The amino acids immediately following the 7-mer amino acid insertion sequence are also typically -AQ-.

[0006] In aspects of the invention, 60 copies of the AAV capsid protein may be assembled into the AAV capsid. The AAV capsid protein may present in VP1, VP2, and VP3 of the mutant AAV capsid.

[0007] The mutant AAV capsid protein may comprise a sequence selected from the group consisting of SEQ ID NO: 2-898. Advantageously, the AAV capsid protein may be characterized with increased transduction enrichment relative to the wild-type AAV9 when measured in brain tissue in a subject when delivered to the subject systemically. In

aspects of the invention, the mutant AAV capsid protein comprises a sequence selected from the group consisting of SEQ ID NO: 2-594.

[0008] The mutant AAV capsid protein may comprise a sequence selected from the group consisting of SEQ ID NO: 595-1496. Advantageously, the mutant AAV capsid protein may be characterized by an increased transduction enrichment relative to the wild-type AAV9 when measured in heart tissue in a subject when delivered to the subject systemically. In aspects of the invention, the mutant AAV capsid protein comprises a sequence selected from the group consisting of SEQ ID NO: 899-1496.

[0009] The mutant AAV capsid protein may comprise a sequence selected from the group consisting of SEQ ID NO: 595-898. The mutant AAV capsid protein may be characterized by an increased transduction enrichment relative to the wild-type AAV9 when measured in brain tissue and heart tissue in a subject when delivered to the subject systemically.

[0010] In aspects of the invention the AAV capsid protein is integrated into an AAV capsid. The AAV capsid is chimeric. The AAV capsid may be isolated and purified.

[0011] Aspects of the invention further provide a composition comprising the AAV capsid of the invention, wherein the AAV capsid comprises an AAV capsid protein comprising at least 95% sequence identity to the wild-type AAV capsid protein, wherein the mutant AAV capsid protein comprises a sequence selected from the group consisting of SEQ ID NO: 2-1496. The composition may be formulated for systematic administration to a subject. Systematic administration of the composition may result in expression of a gene product delivered by the AAV capsid. Administration of the composition results in increased transduction enrichment relative to the wild-type AAV9 when measured in heart and/or brain.

[0012] Aspects of the invention further provide a method of treating a disease or condition in a subject comprising administering a therapeutically effective amount of the composition of the invention. For example, provided is a composition for use in treating a disease or condition in a subject, the use comprising administering a therapeutically effective amount of a composition of the invention. Advantageously, because the compositions of the invention comprise AAV capsid proteins that are direct engineered AAVs to brain tissue, heart tissue, or brain and heart tissues 10 specifically, the compositions provide effective methods and uses for treating diseases associated with the brain, heart, or brain and heart.

TABLE 1

Brain Targeting sequences	
SEQ ID NO:	AA sequence (#587-597)
2	AQAAATAAQAO
3	AQAAALPPRSAQ
4	AQAAASSGHSAQ
5	AQAESRTSAAQ
6	AQAFSVSPDAQ
7	AQAGGHSNNAQ

TABLE 1-continued

Brain Targeting sequences	
SEQ ID NO:	AA sequence (#587-597)
8	AQAGPSNAMAQ
9	AQAGSIRDDAQ
10	AQAHGDGSLAQ
11	AQAHSSGVGAQ
12	AQAHHTTLSAQ
13	AQAIAGYASAQ
14	AQ AISNTTVAQ
15	AQALARDHSAQ
16	AQALRGSLCAQ
17	AQAMDRTNMAQ
18	AQAMQTRNPAAQ
19	AQAMSSLTAAQ
20	AQAPGALMTAQ
21	AQAPREIAIAQ
22	AQAQADRDPDAQ
23	AQAQGNLAFQQ
24	AQARSNEMTAQ
25	AQASGHAPTAQ
26	AQASGSNAHAQ
27	AQASLAVTSAQ
28	AQASRDSGSAQ
29	AQASRSESYAQ
30	AQASTRVVNAQ
31	AQATSDRPTAQ
32	AQATVTHKDAQ
33	AQAVGTMAPAQ
34	AQDASRVLAQQ
35	AQDMTGLVIAQ
36	AQDNRTRTNAQ
37	AQDPSRSASAQ
38	AQDPTTRNEAQ
39	AQDRSNITLQQ
40	AQDSAQNREGAQ
41	AQDSGPSKAAQ
42	AQDSIQYSFAQ
43	AQDSREQGRAQ

TABLE 1-continued

Brain Targeting sequences	
SEQ ID NO:	AA sequence (#587-597)
44	AQDSRLGVTAQ
45	AQDSRQPNAQ
46	AQDSRVPSQAQ
47	AQDSVNLSSAQ
48	AQDVRHGGTAQ
49	AQDVRNSNTSAQ
50	AQDVSVSFAAQ
51	AQDYAYRTGAQ
52	AQEHTRGETAQ
53	AQEITHSHSAQ
54	AQENHTENKAQ
55	AQENRVANKAQ
56	AQEPERFMFAQ
57	AQEPRLATDAQ
58	AQERTASLHAQ
59	AQESNRHPYAQ
60	AQESSHTGGAQ
61	AQESVGRGEAQ
62	AQEVCGGSKAQ
63	AQFALPVPSAQ
64	AQFGSVQDRAQ
65	AQFGTGGVPAQ
66	AQFGTMGDKAQ
67	AQFGVTAGSAQ
68	AQFINTPVVAQ
69	AQFLVGGTVAQ
70	AQFSNFLPAAQ
71	AQFSGMSNSAQ
72	AQFVKIAKSAQ
73	AQFVTLVTSQ
74	AQGADARLHAQ
75	AQGDAARSGAQ
76	AQGGGSHSSAQ
77	AQGHQHVTEAQ
78	AQGHSETRLAQ
79	AQGIGHMNDAQ

TABLE 1-continued

Brain Targeting sequences	
SEQ ID NO:	AA sequence (#587-597)
80	AQGLALTLNAAQ
81	AQGLAVASPAAQ
82	AQGLSSPLAAQ
83	AQGLVLSSTAQ
84	AQGLVSSSVAQ
85	AQGLYNIRSAQ
86	AQGNAVSVAQQ
87	AQGNHTRHAAQ
88	AQGNLTRLTAQ
89	AQGNNTRAHAAQ
90	AQGNNTTSRAQ
91	AQGNQSNAAAQ
92	AQGNRTRAPAAQ
93	AQGNRTTNDAAQ
94	AQGNTTVNQAAQ
95	AQGSDSRNSAQ
96	AQGSFTQFSAQ
97	AQGSGASVLAQ
98	AQGSGISSHAAQ
99	AQGSGTPGHAAQ
100	AQGSLTVLKAQ
101	AQGSMMHKDAQ
102	AQGSSRNEVAQ
103	AQGTGSERLAAQ
104	AQGTQDRQLAQ
105	AQGTLSSSAQ
106	AQGTTSHHLAQ
107	AQGVGLPTTAQ
108	AQGVGSSLQAQ
109	AQGVHASTQAAQ
110	AQGVHGSNAAQ
111	AQGVISRPAQ
112	AQGVSAVAAAQ
113	AQGVTSVVAAQ
114	AQHAGNITIAQ
115	AQHGSRSDYAQ

TABLE 1-continued

Brain Targeting sequences	
SEQ ID NO:	AA sequence (#587-597)
116	AQHGVTTQSAQ
117	AQHGVVSSSAQ
118	AQHHSPQSSAQ
119	AQHISLHQQAQ
120	AQHISSVQPAQ
121	AQHLGTVSAAQ
122	AQHMSGVNAAQ
123	AQHNVMSSFAQ
124	AQHNVSLANAQ
125	AQHQLHHGAAQ
126	AQHSSGTSGAQ
127	AQHSSSNIIAQ
128	AQHSTKAEVAQ
129	AQHTANLLDAQ
130	AQHTGASLTAQ
131	AQHTGPLSNAQ
132	AQHTLPIMSAQ
133	AQHTSTREMAQ
134	AQHTSVRIDAQ
135	AQHTTSHMEAQ
136	AQHYVSVPQAQ
137	AQIAGRQNQSAQ
138	AQIAHLSSVAQ
139	AQIASSPLSAQ
140	AQIASSSLHAQ
141	AQIGGLTPPAQ
142	AQIGSLTGAAQ
143	AQIGSMNEKAQ
144	AQIGSSMPNAQ
145	AQILATGGSAQ
146	AQILDRSNMAQ
147	AQILRDGHQAQ
148	AQILSEHRVAQ
149	AQILTRSTFAQ
150	AQILVTSTSQAQ
151	AQIMTSTLPAQ

TABLE 1-continued

Brain Targeting sequences	
SEQ ID NO:	AA sequence (#587-597)
152	AQINRETSFAQ
153	AQINSAGLLAQ
154	AQISAASSTSAQ
155	AQISAGALIAAQ
156	AQISLTNSNAQ
157	AQISSSRNGAQ
158	AQISTGKLGAQ
159	AQISTRESIAQ
160	AQITGQMSAAQ
161	AQITGQMSVAQ
162	AQITSSPTSAQ
163	AQITSSVMQAQ
164	AQITTHPTTAQ
165	AQIVAGHRDAQ
166	AQIVDTRNPAQ
167	AQIVGKPMEAQ
168	AQIVLPSTYAQ
169	AQIVSGSLGAQ
170	AQIYSSSVSAQ
171	AQKDQNRESAQ
172	AQKDSHSYNAQ
173	AQKEQQAVSAQ
174	AQKHNIIPNVAQ
175	AQKPTVGFAAQ
176	AQKQAGTSVAQ
177	AQKQHSDHPAQ
178	AQKSQTNDVAQ
179	AQKSSLRFYAQ
180	AQKTSSSTVVAQ
181	AQLAHQTRDAQ
182	AQLAQAAASAAQ
183	AQLARTTTDAQ
184	AQLASASSVVAQ
185	AQLASSTLMAQ
186	AQLDRSGSTAQ
187	AQLDTSTALAQ

TABLE 1-continued

Brain Targeting sequences	
SEQ ID NO:	AA sequence (#587-597)
188	AQLGAGPHVAQ
189	AQLGGSYGSAQ
190	AQLGSLANTAQ
191	AQLGTNRMSAQ
192	AQLGVSSVEAQ
193	AQLHNTVVSAQ
194	AQLHSPASNAQ
195	AQLHSSPSTAQ
196	AQLILTTSEAQ
197	AQLKDQGSSAQ
198	AQLLDTHYRAQ
199	AQLLDTLMQAQ
200	AQLLITAVQAQ
201	AQLLLTPQLAQ
202	AQLLRSTLPAQ
203	AQLLSATTHAQ
204	AQLLSSNSAQ
205	AQLMSILTMAQ
206	AQLMSSVSAAQ
207	AQLNHHSVGAQ
208	AQLNHTSPGAQ
209	AQLNPQGTSAQ
210	AQLNSDKSSAQ
211	AQLNSTRTYAQ
212	AQLNTAQSTAQ
213	AQLNTGSNAAQ
214	AQLNVSTTSAQ
215	AQLPASDISAQ
216	AQLPRDKWEAQ
217	AQLPSETKFAQ
218	AQLQSNRSDAQ
219	AQLQSRSGFAQ
220	AQLQTSLSLAQ
221	AQLRNSESTAQ
222	AQLRNSSELAQ
223	AQLRTDSLEAQ

TABLE 1-continued

Brain Targeting sequences	
SEQ ID NO:	AA sequence (#587-597)
224	AQLSDHNLKAQ
225	AQLSGFNVLAQ
226	AQLSGHFSFAQ
227	AQLSGMSGNAQ
228	AQLSGQSMDAQ
229	AQLSGQVTMAQ
230	AQLSNESRSAQ
231	AQLSNITNSAQ
232	AQLSQASSAAQ
233	AQLSQSGKEAQ
234	AQLRSRSPVPAQ
235	AQLRSRSSPAQ
236	AQLSSANLQAQ
237	AQLSSSITQAQ
238	AQLSSSVNAAQ
239	AQLSSTLTSQAQ
240	AQLSSTYANAQ
241	AQLSTDASQAO
242	AQLSTISSHQAQ
243	AQLSTSGPSAQ
244	AQLSVAQGSAQ
245	AQLSVLSQIAQ
246	AQLTGNQSVAAQ
247	AQLTHTIPSQAQ
248	AQLTNVIMGAQ
249	AQLTSLPQVAAQ
250	AQLTPSAAAQ
251	AQLTTSSTLAQ
252	AQLTTTHSQAQ
253	AQLVIMGMSAQ
254	AQLVSSSESRAQ
255	AQLVTAGTAAQ
256	AQMDTHNLVAAQ
257	AQMDYSTSPAQ
258	AQMGSQGQMAQ
259	AQMGTAAHTIAQ

TABLE 1-continued

Brain Targeting sequences	
SEQ ID NO:	AA sequence (#587-597)
260	AQMGTHVVTAQ
261	AQMHDGRLVAQ
262	AQMLAKTATAQ
263	AQMLSSTMRAQ
264	AQMLSSTTSGAQ
265	AQMLVKHAGAQ
266	AQMMSSTMNAAQ
267	AQMNHNNQQHAQ
268	AQMNHHTSNKAQ
269	AQMNNKSPGAQ
270	AQMNNISTRPAQ
271	AQMNSSSHSAQ
272	AQMSGNSMAAQ
273	AQMSTSYYSSAQ
274	AQMYLENNNSAQ
275	AQNAGYSAAAQ
276	AQNANHAMPAQ
277	AQNAQGTHVAQ
278	AQNASEKSSAQ
279	AQNASNSTTAQ
280	AQNGLRADTAQ
281	AQNGRGTTGAQ
282	AQNGRRTTVAAQ
283	AQNGSITGTAQ
284	AQNGSRGAAAQ
285	AQNHEQYQWAAQ
286	AQNHSGTTSAQ
287	AQNHTGVSPAQ
288	AQNHVGGAQ
289	AQNIQSLSTAQ
290	AQNLGLISVAQ
291	AQNLSLTHEAQ
292	AQNMSSNKDAQ
293	AQNMSTSMQSAQ
294	AQNPTRSLSAQ
295	AQNQCQSHVAQ

TABLE 1-continued

Brain Targeting sequences	
SEQ ID NO:	AA sequence (#587-597)
296	AQNQFTATEAQ
297	AQNQLGNSAAQ
298	AQNQQNKANAQ
299	AQRNEVHSAQ
300	AQRSDSAMAQ
301	AQNSAFTAQAO
302	AQNSFSPATAQ
303	AQNSGNYQIAQ
304	AQNSHGHALAQ
305	AQNSPGYTAQ
306	AQNSSAATGAQ
307	AQNSSGHGVAQ
308	AQNSSGSAAQ
309	AQNSSSSPGAQ
310	AQNSTSISHAQ
311	AQNTLSNISAAQ
312	AQNTQTHSSAQ
313	AQNTTQPSNAQ
314	AQNVMSGGAAQ
315	AQNVQSSNLAQ
316	AQNYCGKECAQ
317	AQPATGTSGAQ
318	AQPAVGSGAGAQ
319	AQPIGGSNMAQ
320	AQPIHQQTGVAQ
321	AQPLQTSNAAQ
322	AQPLTGQTNAQ
323	AQPLYNQTPAQ
324	AQPPKPPSIAQ
325	AQPQPHRLLAQ
326	AQPQRSQHIAQ
327	AQPQSNVSTAQ
328	AQPSAEQAQAAQ
329	AQPSGAYGEAQ
330	AQPSGQKIDAQ
331	AQPSGSHSIAQ

TABLE 1-continued

Brain Targeting sequences	
SEQ ID NO:	AA sequence (#587-597)
332	AQPSGTNIGAQ
333	AQPSNALAGAQ
334	AQPSNPQSYAQ
335	AQPSPSTMRAQ
336	AQPSRDVTPAQ
337	AQPSYYSDAQ
338	AQPVAAHVRAQ
339	AQPVHGSTDQAQ
340	AQQAAVSGGAQ
341	AQQATHVALAQ
342	AQQDSTKALAQ
343	AQQIHGPMQAQ
344	AQQLLVSVTAQ
345	AQQLSGSLMAQ
346	AQQLSHEKSAQ
347	AQQNNTHGGAQ
348	AQQNSGPLHAQ
349	AQQRTDQQTAQ
350	AQQVAHTQIAQ
351	AQQVGKSSAAQ
352	AQQVISTGSAQ
353	AQQVRTNTSAQ
354	AQRADRVQEAQ
355	AQRDKMVFMAQ
356	AQRDSVTDSAQ
357	AQRESRVSQAQ
358	AQRGHGQEIAQ
359	AQRGLSAVNAQ
360	AQRIGSSAIAQ
361	AQRISSETSAQ
362	AQRLDIHMAQ
363	AQRNTSNQEAQ
364	AQRSNNCIGAQ
365	AQRSNVDGLAQ
366	AQRSSLHTSAQ
367	AQRSTESLHAQ

TABLE 1-continued

Brain Targeting sequences	
SEQ ID NO:	AA sequence (#587-597)
368	AQRTAANHEAQ
369	AQRTDGTSIAQ
370	AQRTHSAMPAQ
371	AQRTSGPAAAQ
372	AQSAPNRTDAQ
373	AQSAQSAIQAQ
374	AQSARGMSGAQ
375	AQSASRDPAAQ
376	AQSDHESVRDAQ
377	AQSDKNLQQAQ
378	AQSDLICCPAQ
379	AQSERSYPSAQ
380	AQSFGQSLAQ
381	AQSFSNVSPAQ
382	AQSGLNTLAAQ
383	AQSGNHNPAAQ
384	AQSGPVQNQAQ
385	AQSGSSHERRAQ
386	AQSGSVMSSAQ
387	AQSHIVSSSAQ
388	AQSHLSSQVAQ
389	AQSHNSAFEAQ
390	AQSIARDLAAQ
391	AQSIGSSYPAQ
392	AQSIKQNNEGAQ
393	AQSITQGSAAQ
394	AQSKNDTSMAQ
395	AQSLAGTLSAQ
396	AQSLANSQTAQ
397	AQSLGAQLFAQ
398	AQSLHLSSSAQ
399	AQSLSHTRPAQ
400	AQSLSQTVGAQ
401	AQSLSSTGGAQ
402	AQSLVSLKEAQ
403	AQSLVVTTPAQ

TABLE 1-continued

Brain Targeting sequences	
SEQ ID NO:	AA sequence (#587-597)
404	AQSMGSSNWAQ
405	AQSMISSNRAQ
406	AQSMMSLDQAQ
407	AQSMPQPLVAQ
408	AQSMSSNLTAQ
409	AQSMTLSNYAQ
410	AQSNATHRFAQ
411	AQSNHTKPIAQ
412	AQSNQTRHVAQ
413	AQSPKPPSTAQ
414	AQSQDTASKAQ
415	AQSQIAEPAAQ
416	AQSQKAPDIAQ
417	AQSQLSPSNAQ
418	AQSQMSSAGAQ
419	AQSQSSSQTAQ
420	AQSRESPSTAQ
421	AQSRLESSAQ
422	AQSRNQPAEAQ
423	AQSRSSDAFAQ
424	AQSRTDLLSAQ
425	AQSRTSNQAAQ
426	AQSRVEEMNAQ
427	AQSRVNTLDAQ
428	AQSSAVLLNAQ
429	AQSSDRVSSAQ
430	AQSSGHSSEAQ
431	AQSSGLRLGAQ
432	AQSSGSREVAQ
433	AQSSHDTLQAQ
434	AQSSLSVLWAQ
435	AQSSLSVVPAQ
436	AQSSMWHKDAQ
437	AQSSQSFGYAQ
438	AQSSREVVTAQ
439	AQSSRGETPAQ

TABLE 1-continued

Brain Targeting sequences	
SEQ ID NO:	AA sequence (#587-597)
440	AQSSSQSSDAQ
441	AQSSTQHEKAO
442	AQSSVSRTSAQ
443	AQSSYGYRSAQ
444	AQSTALTTGAAQ
445	AQSTATSPAAQ
446	AQSTGQQGFTAQ
447	AQSTGQQGINAQ
448	AQSTGTSGQAAQ
449	AQSTISTGSAQ
450	AQSTKQNVNAQ
451	AQSTMMAIGSAQ
452	AQSTMGALKAQ
453	AQSTNRRAEQAAQ
454	AQSTSALGPAQ
455	AQSTSDDYSRAQ
456	AQSTSPTYVAQ
457	AQSTSSITVAAQ
458	AQSTSSPTSAQ
459	AQSTSYYASIAQ
460	AQSTTRVVDAQ
461	AQSVAPIANAQ
462	AQSVGNGNIAQ
463	AQSVRSGFKAQ
464	AQSVSDGGFAQ
465	AQSVSSNIVAAQ
466	AQSVSTAQQAQ
467	AQTAHNVEQAAQ
468	AQTAPQSMDAQ
469	AQTDRGQVQAAQ
470	AQTDSSRESAQ
471	AQTEAGSAAAQ
472	AQTEQRHAPAQ
473	AQTFGKASDAQ
474	AQTGAAASNIAQ
475	AQTGLSAEGAQ

TABLE 1-continued

Brain Targeting sequences	
SEQ ID NO:	AA sequence (#587-597)
476	AQTGTVHSTAQ
477	AQTHMVGAAQ
478	AQTHQPAEKAO
479	AQTHTALPDAQ
480	AQTHTRSMIAQ
481	AQTIINNVAAQ
482	AQTKHSTTEAQ
483	AQTLAGSSIAQ
484	AQTLRTSDLAQ
485	AQTLSGLVMAQ
486	AQTLSTHVVAQ
487	AQTNITRAQAQ
488	AQTNSTRNLAQ
489	AQTNSTRNVAQ
490	AQTNTHSVTAQ
491	AQTNTLHTAAQ
492	AQTNTRTMQAQ
493	AQTNVSSEIAQ
494	AQTPTSSSSAQ
495	AQTOASASGAQ
496	AQTOGDRGTAQ
497	AQTOQSKSESAQ
498	AQTOQHVTSAQ
499	AQTOQPTVPTNAQ
500	AQTRTDSNGAQ
501	AQTSAHANQAQ
502	AQTSQHSSTAQ
503	AQTSLKIVPAQ
504	AQTSLTVNIAQ
505	AQTSQHSKDAQ
506	AQTSQHVSQAQ
507	AQTSSTGVQAAQ
508	AQTSQHVSQAQ
509	AQTSVAGSNAQ
510	AQTSVTVQDAQ
511	AQTTGQITVAQ

TABLE 1-continued

Brain Targeting sequences	
SEQ ID NO:	AA sequence (#587-597)
512	AQTTSQALYAQ
513	AQTTSSSVNAQ
514	AQTTSTMSTAQ
515	AQTTTSPAIAQ
516	AQTVGRAMEAQ
517	AQTVGVLAQQ
518	AQTVRASTDAAQ
519	AQTVVSGTGAQ
520	AQVANDSFKAQ
521	AQVARGDSDAQ
522	AQVASGVATAQ
523	AQVASRDQFAQ
524	AQVATRPDAAQ
525	AQVCHLRTSAQ
526	AQVDNVTRSAQ
527	AQVDSRSTPAQ
528	AQVEPIRICAQ
529	AQVERLQSGAQ
530	AQVFGAHSFAQ
531	AQVGASSSTAQ
532	AQVGGANLAAQ
533	AQVGNAPPFAQ
534	AQVGSNVGQAQ
535	AQVGSSSVSAQ
536	AQVGTVSNSAQ
537	AQVGVNRTNAQ
538	AQVHLQAHNAQ
539	AQVHSLPSVAQ
540	AQVHTKYTDAAQ
541	AQVIAATAEAQ
542	AQVIWQNQVAQ
543	AQVKSGSMAAQ
544	AQVLSGQSPAQ
545	AQVLSSMSLAQ
546	AQVLTSSDLAQ
547	AQVNHGAIQAQ

TABLE 1-continued

Brain Targeting sequences	
SEQ ID NO:	AA sequence (#587-597)
548	AQVNSHLTGAQ
549	AQVNTHTSSAQ
550	AQVNVTRSNAQ
551	AQVPGGAGFAQ
552	AQVPSSNVSAQ
553	AQVQLVANVAQ
554	AQVQSHGVYAQ
555	AQVRSGSNIAQ
556	AQVRTAAQPAQ
557	AQVSGHEHYAQ
558	AQVSIHLTQAQ
559	AQVSNSMATAQ
560	AQVSNTLLGAQ
561	AQVSSFQSSAQ
562	AQVSSLPSPAQ
563	AQVSTANTSAQ
564	AQVSTSSLTAQ
565	AQVSVSSTAAQ
566	AQVTGSTKLAQ
567	AQVTSQIMDAQ
568	AQVTSVSYSAQ
569	AQVVGSSHQAQ
570	AQVVTDAYRAQ
571	AQWINAFKAAQ
572	AQWSQSNKAAQ
573	AQWSSRLNSAQ
574	AQYAHQYNAAQ
575	AQYDMYYDKAQ
576	AQYERSKVDAQ
577	AQYGTMIQVAQ
578	AQYHSGVGEAQ
579	AQYKATHIAAQ
580	AQYKTGNHEAQ
581	AQYLSNLMMQAQ
582	AQYNGHSNNAQ
583	AQYNGQSSMAQ

TABLE 1-continued

Brain Targeting sequences	
SEQ ID NO:	AA sequence (#587-597)
584	AQYNHTRLAQ
585	AQYNSTRASAQ
586	AQYPSSSSMAQ
587	AQYQHSSLTAQ
588	AQYQLVPRSAQ
589	AQYQTTSISPAQ
590	AQYQTSTQGAQ
591	AQYSGTHTAAQ
592	AQYSSGHANAAQ
593	AQYSSGLAGAQ
594	AQYVNHGLGAAQ

TABLE 2-continued

Brain and Heart Sequences	
SEQ ID NO:	AA sequence (#587-597)
615	AQDNKVKTFAQ
616	AQDNMIRSIAQ
617	AQDNSTRISAQ
618	AQDNSVKHSAQ
619	AQDNSVRLTAQ
620	AQDNSVRPSAQ
621	AQDNSVRSPAQ
622	AQDNVIRSIAQ
623	AQDRAQSHSAQ
624	AQDRSQSHSAQ
625	AQDTSHRASAQ
626	AQEGGTGKVAQ
627	AQENHVRSQAQ
628	AQENKIKTNAQ
629	AQENNTRMVAQ
630	AQENQVRNTAQ
631	AQENRIINHAQ
632	AQENSTKSMAQ
633	AQENSTRVQAAQ
634	AQENTTKHLAQ
635	AQENTTKSLAQ
636	AQENTVRNMAQ
637	AQETAVRSSAQ
638	AQETHNRAGAQ
639	AQEVRGGTMAQ
640	AQFNSTKVVAQ
641	AQFNSTRSVAQ
642	AQFNSVRPVAQ
643	AQGGAPPTNAQ
644	AQGNPAIRNGAQ
645	AQGNNAVKPFAQ
646	AQGNNGTRGFAQ
647	AQGNNGTRPTAQ
648	AQGNITKVFAQ
649	AQGNNSKPAQQ
650	AQGNNTKQMAQ

TABLE 2

Brain and Heart Sequences	
SEQ ID NO:	AA sequence (#587-597)
595	AQAAAGVSAGAQ
596	AQAGHNMGGAQ
597	AQANKVKDLAQ
598	AQANLTRVTAQ
599	AQANNTMKQAAQ
600	AQANQTRPFAQ
601	AQANSVKNIAQ
602	AQANTTKSSAQ
603	AQANTTRQTAQ
604	AQANTVRNTAQ
605	AQARAAPQTAQ
606	AQASAGSSGAQ
607	AQASNHTSGAQ
608	AQASRSEIGAQ
609	AQASSSAREAQ
610	AQATGYSGAAQ
611	AQATHSREQAQ
612	AQATNSAVGAQ
613	AQDARPSPNAQ
614	AQDNHVRTVVAQ

TABLE 2-continued

Brain and Heart Sequences	
SEQ ID NO:	AA sequence (#587-597)
651	AQGNNTNRLTAQ
652	AQGNQLKNTAQ
653	AQGNRIAQVAQ
654	AQGNRKPNEAQ
655	AQGNRTQPSAQ
656	AQGNRTSGGAQ
657	AQGNRVQNVAQ
658	AQGNSIIINHAQ
659	AQGNSSKNLAQ
660	AQGNSVKDSAQ
661	AQGNSVKGTAQ
662	AQGNSVRISAQ
663	AQGNSVRTVVAQ
664	AQGNTIKDYAQ
665	AQGNTTRHPAQ
666	AQGNTTRVPAQ
667	AQGNTVKSEAQ
668	AQGRNTSMEAQ
669	AQGRSSQGEAQ
670	AQGSRGSGAAQ
671	AQGTRSTDNAQ
672	AQGTSSNTGAQ
673	AQGVASSHQAQ
674	AQHGSSLGLAQ
675	AQHGSTFTGAQ
676	AQHIGSIPAAQ
677	AQHNNSVRPVAQ
678	AQHNSTRNAAQ
679	AQHNTTKPIAQ
680	AQHSQSSKDAQ
681	AQHTSSISSAQ
682	AQIAHASSMAQ
683	AQIAHSSSGAQ
684	AQIISSNVPAQ
685	AQINATRNQAQ
686	AQINHVRDTAQ

TABLE 2-continued

Brain and Heart Sequences	
SEQ ID NO:	AA sequence (#587-597)
687	AQINTTKPIAQ
688	AQIRSTTMDAQ
689	AQISAGPREAQ
690	AQLHGTSTAAQ
691	AQLNATKPIAQ
692	AQLNHTKQTAQ
693	AQLNNTKPIAQ
694	AQLNNTRPGAQ
695	AQLNSTARSAQ
696	AQLNSTKPIAQ
697	AQLNTAKPIAQ
698	AQLNTIKPIAQ
699	AQLNTSKPIAQ
700	AQLNTTKAIAQ
701	AQLNTTKHIAQ
702	AQLNTTKLAAQ
703	AQLNTTKLIAQ
704	AQLNTTKPFAQ
705	AQLNTTKPGAQ
706	AQLNTTKPIAQ
707	AQLNTTKPLAQ
708	AQLNTTKPMAQ
709	AQLNTTKPNAQ
710	AQLNTTKPSAQ
711	AQLNTTKPTAQ
712	AQLNTTKPVAQ
713	AQLNTTKSIAQ
714	AQLNTTKSVAQ
715	AQLNTTKTIAQ
716	AQLNTTRPIAQ
717	AQLNTVKPLAQ
718	AQLNYVRQVAQ
719	AQLPQHGSGAQ
720	AQLPSAHSSAQ
721	AQLSSPSTAAQ
722	AQLTNQSSAAQ

TABLE 2-continued

Brain and Heart Sequences	
SEQ ID NO:	AA sequence (#587-597)
723	AQLVGT SAMAQ
724	AQLVRNTDLAQ
725	AQMHNIA TPAQ
726	AQMNHTRREAQ
727	AQMNNTARPAQ
728	AQMNNTKQTAQ
729	AQMNNTRGSAQ
730	AQMNNTVRAAQ
731	AQMNSTRAAAQ
732	AQMPGHGSSAQ
733	AQMPTQHASAQ
734	AQMTHSHGSAQ
735	AQNAHNVSTAQ
736	AQNNLTRNNAQ
737	AQNNMTRAIAQ
738	AQNNMTRNNAQ
739	AQNNQIKLMAQ
740	AQNNRSPTLAQ
741	AQNNSIRLAAQ
742	AQNNSI RSSAQ
743	AQNNSTKLAAQ
744	AQNNSVRPSAQ
745	AQNNTSKNVAQ
746	AQNNTTKLAAQ
747	AQNNTTRTAQ
748	AQNNTVKNLAQ
749	AQNNTVRPSAQ
750	AQNNVVRSTAQ
751	AQNNYVRSAAQ
752	AQNQHSSQTAQ
753	AQRGIQSDAQ
754	AQNSHNVPSAQ
755	AQNSNNVAGAQ
756	AQNSRSVSDAQ
757	AQNSSTRTGQAQ
758	AQNSTKPITAQ

TABLE 2-continued

Brain and Heart Sequences	
SEQ ID NO:	AA sequence (#587-597)
759	AQNSTRPLTAQ
760	AQNTRGLVEAQ
761	AQNTTKGMAAQ
762	AQNTTRMTTAQ
763	AQNTTRSESAQ
764	AQNVNRNLDAQ
765	AQPAGRNLDAQ
766	AQPGYGNQGAQ
767	AQPMMSRDTSAQ
768	AQPNAVKPMQAQ
769	AQPNITRNNAQ
770	AQPNIVRSTAQ
771	AQPNQTKTTAQ
772	AQPNTTKLSAQ
773	AQPNTTKPIAQ
774	AQPNTRRSTAQ
775	AQPNVTRGFAQ
776	AQPNVTRTVAQ
777	AQQATVRTEAQ
778	AQQDRSSAVAQ
779	AQQHGVSAPAQ
780	AQQIQRSIDAQ
781	AQQNAIROSAQ
782	AQQNATKGIAQ
783	AQQNLTRMTAQ
784	AQQNNVRPSAQ
785	AQQNSIRSVAQ
786	AQQNSTRSLAQ
787	AQQNTTRTSAQ
788	AQQNYTKVAAQ
789	AQQRIPSNTAQ
790	AQQRTSSQEAQ
791	AQQSSSRLGAQ
792	AQQVRSMDGQAQ
793	AQRDGLILIAQ
794	AQRDNIIILIAQ

TABLE 2-continued

Brain and Heart Sequences	
SEQ ID NO:	AA sequence (#587-597)
795	AQRDSTMHAAQ
796	AQRDTHVFHAQ
797	AQRGDLHFQAO
798	AQRLSQSSDAQ
799	AQRSGLILFAQ
800	AQRSGSHFVAQ
801	AQRVGQSVSAQ
802	AQRVVGPLFAQ
803	AQSDRGNHSAQ
804	AQSDSRNASAQ
805	AQSEARGNAQ
806	AQSGHNASGAQ
807	AQSGSHTNSAQ
808	AQSGSSRGGEAQ
809	AQSLSQPERAQ
810	AQSMGHSHAAQ
811	AQSMSYGSSAQ
812	AQSNAAKPVAQ
813	AQSNATTRAAQ
814	AQSNDIRNNAQ
815	AQSNDTKNTAQ
816	AQSNNGIRNTAQ
817	AQSNHTTRSAQ
818	AQSNLVRQTAQ
819	AQSNNAKPSAQ
820	AQSNNNSSRPAQ
821	AQSNQTRGNAQ
822	AQSNSTKMIAQ
823	AQSNSTKNAAQ
824	AQSNSTKNVAQ
825	AQSNSTKSLAQ
826	AQSNSTRSSAQ
827	AQSNSVKAPAQ
828	AQSNSVKERAQ
829	AQSNSVKITAQ
830	AQSNSVKSFAQ

TABLE 2-continued

Brain and Heart Sequences	
SEQ ID NO:	AA sequence (#587-597)
831	AQSNNSVKTVAQ
832	AQSNSVRLVVAQ
833	AQSNNTTKPIAQ
834	AQSNNTTRPMAQ
835	AQSNNTTRQTAQ
836	AQSNNTTRRAAQ
837	AQSNTVKAMAQ
838	AQSNTVKNAAQ
839	AQSNTVRNSAQ
840	AQSNTVRSSAQ
841	AQSNVIRNSAQ
842	AQSNYTRSPAQ
843	AQSPSRHTEAQ
844	AQSQHASSAAQ
845	AQSQSSSGSAQ
846	AQSSATRVDAQ
847	AQSSGYAQQAQ
848	AQSSNSGREAQ
849	AQSSSGGTGAQ
850	AQSTAIRQDAQ
851	AQSTQTRAAAQ
852	AQSTQVRSEAQ
853	AQSTRGNDNAQ
854	AQSTSTHGAAQ
855	AQTVRSGDAQ
856	AQTMRQTNDHQ
857	AQTNHHTREVAQ
858	AQTNHVKTMAQ
859	AQTNHVRSAAQ
860	AQTNLVKPTAQ
861	AQTNMTRTTAQ
862	AQTNNACTRPAQ
863	AQTNNAVRAAQ
864	AQTNNTKSTAQ
865	AQTNNTLRSAQ
866	AQTNNTSPGAQ

TABLE 2-continued

Brain and Heart Sequences	
SEQ ID NO:	AA sequence (#587-597)
867	AQTNNVRAPAQ
868	AQTNSIKSTAQ
869	AQTNSIRPIAQ
870	AQTNSVKLIAQ
871	AQTNTTKSMAQ
872	AQTNTVRASAQ
873	AQTNTVRQTAQ
874	AQTRGASNEAQ
875	AQTSGRSDAAQ
876	AQTVSDRSGAQ
877	AQVGHSAVSAQ
878	AQVHNRADVAQ
879	AQVHSGPVSAQ
880	AQVNATRNVAQ
881	AQVNHTKGLAQ
882	AQVNSLGNNAQ
883	AQVNSTKSMAQ
884	AQVNSTKSTAQ
885	AQVNSTRGNAQ
886	AQVNTTKPIAQ
887	AQVNTTQSGAQ
888	AQVSDTRAGAQ
889	AQVSHSLASAQ
890	AQVSSSGMTAQ
891	AQVSVRTSDAQ
892	AQWAANTSGAQ
893	AQYAGVSSPAQ
894	AQYGSHGVGAQ
895	AQYNSTKNGAQ
896	AQYNSTKNMAQ
897	AQYNSTKSHAQ
898	AQYNTTKPIAQ

TABLE 3

Heart Sequences	
SEQ ID NO:	AA sequence (#587-597)
899	AQAAHNKDSAQ
900	AQADARNTSAQ
901	AQAESRGSAQ
902	AQAESRIGSAQ
903	AQAESRTMPAQ
904	AQAHAAATSAAQ
905	AQAISLRGDAQ
906	AQAKGSTLLAQ
907	AQALARSVSAQ
908	AQALGQSRVAQ
909	AQALSHSSGAQ
910	AQANHTRVAAQ
911	AQAQGENLLAQ
912	AQARTGPMLAQ
913	AQARTHLDQAQ
914	AQARVGATAAQ
915	AQARVGTNVAQ
916	AQASHSRDAAQ
917	AQASSNKTAAQ
918	AQASSSTAGAQ
919	AQATARNAVAAQ
920	AQATGRLPEAQ
921	AQATRNTDMAQ
922	AQATSIRGPAQ
923	AQATVSSRIAQ
924	AQAVNKPLSAQ
925	AQAVPQSAGAQ
926	AQAVPSHHGAQ
927	AQAVRGAMNAQ
928	AQAVSGIRIAQ
929	AQAVSRSDAQ
930	AQAVWPTRNAQ
931	AQAYARGESAQ
932	AQAYGETFWAQ
933	AQCLGPCLQAQ
934	AQDGIRLTPAQ

TABLE 3-continued

Heart Sequences	
SEQ ID NO:	AA sequence (#587-597)
935	AQDGRTVSMAQ
936	AQDGSTRMGAQ
937	AQDIRSTASAQ
938	AQDLSTARSAQ
939	AQDLSTRVAAQ
940	AQDMSRSTGAAQ
941	AQDNVHSRGAQ
942	AQDQHNKSQAQ
943	AQDQKNATGAAQ
944	AQDRAQSNMAQ
945	AQDRGTSQTAQ
946	AQDRRSSDLAQ
947	AQDRSHGHNAQ
948	AQDRSNTSNAQ
949	AQDRSTTHAAQ
950	AQDSLPEPYAQ
951	AQDSNRAVAAQ
952	AQDSNRPSNAQ
953	AQDSRQSKEAQ
954	AQDSSNRTGAAQ
955	AQDSYTRSAAQ
956	AQDTHARGLAQ
957	AQDTROFSQAQ
958	AQEASIRSGAQ
959	AQEGNISRPAQ
960	AQELTMPPYAQ
961	AQEMSKANMAQ
962	AQENQRSGAAQ
963	AQERGKNLEAQ
964	AQERGTVSTAQ
965	AQERNALREAQ
966	AQESGQRNQAQ
967	AQESNSYRPAQ
968	AQESRATTPAQ
969	AQESTKYHAAQ
970	AQESTRISGAQ

TABLE 3-continued

Heart Sequences	
SEQ ID NO:	AA sequence (#587-597)
971	AQETGRYNPAQ
972	AQETTSWVFAQ
973	AQEVNRSSYAQ
974	AQEVSRGKDAQ
975	AQEYGKATAAQ
976	AQFAGMRATAAQ
977	AQFDHSVRSQAQ
978	AQFGSRDGSQAQ
979	AQFGSRQPEAQ
980	AQFHNTRSEAQ
981	AQFNSDRPGAQ
982	AQFNSTRIVAQ
983	AQFNVSSTGAAQ
984	AQFQVATRDAQ
985	AQFSNRTASAQ
986	AQFSRGVNEAQ
987	AQGAGALRGAQ
988	AQGAGRTLEAQ
989	AQGDRLTHGAQ
990	AQGFGHSVSAQ
991	AQGGTAARGAQ
992	AQGGVRNAEAQ
993	AQGHHRTEAQ
994	AQGHSANLGAQ
995	AQGIRNQAEAQ
996	AQGLGTSSNAQ
997	AQGLNRLTPAQ
998	AQGLRSSDSAQ
999	AQGMRTSNDAQ
1000	AQGNNGSRMAAQ
1001	AQGNRIAREAQ
1002	AQGRSLTTDAQ
1003	AQGSKPSQMAQ
1004	AQGSYANSQAQ
1005	AQGVAKGNEAQ
1006	AQGVGMGRNAQ

TABLE 3-continued

Heart Sequences	
SEQ ID NO:	AA sequence (#587-597)
1007	AQGVRSGLSAQ
1008	AQGVRSHDAAQ
1009	AQGVSNRANAQ
1010	AQGVSRATPAQ
1011	AQGVTLGSRAQ
1012	AQGYNSTPGAQ
1013	AQGYSGATGAQ
1014	AQGYSHSSGAQ
1015	AQHFVDSGLAQ
1016	AQHGTSPRDAQ
1017	AQHIVTHDLAQ
1018	AQHLVDRSLAQ
1019	AQHMSDSPHAQ
1020	AQHMVPSSLQAQ
1021	AQHNLPVLHAQ
1022	AQHNPTRADAQ
1023	AQHPVQSSLQAQ
1024	AQHQAKLQNAQ
1025	AQHQIAYDLAQ
1026	AQHQVPSLLAQ
1027	AQHRIATVEAQ
1028	AQHRVSEHFAQ
1029	AQHSSIGSSAQ
1030	AQHSVSHHFAQ
1031	AQHYLSTDFAQ
1032	AQIASRGLAAQ
1033	AQIDNRHNGAQ
1034	AQIGASSGGAQ
1035	AQIGGAVTTAQ
1036	AQIGGHERPAQ
1037	AQIGHVSANAQ
1038	AQIGRVTNEAQ
1039	AQIGSRASDAQ
1040	AQIGSSRLGAQ
1041	AQIHGKEREAQ
1042	AQIHLSSATAQ

TABLE 3-continued

Heart Sequences	
SEQ ID NO:	AA sequence (#587-597)
1043	AQIHSGDTAQ
1044	AQIHSTNPGAQ
1045	AQIISNRAVAQ
1046	AQILHLPMNAQ
1047	AQILTSTVGAQ
1048	AQINSTATGAQ
1049	AQIPNFPTLAQ
1050	AQIPSGNVSAQ
1051	AQIPSKSPAAQ
1052	AQIPSTHTGAQ
1053	AQIPSTRAGAQ
1054	AQIRHGATDAQ
1055	AQIRPRPEDAQ
1056	AQIRSDHSSAQ
1057	AQIRSDSAMAQ
1058	AQIRSSTGDAQ
1059	AQIRSSTIFQAQ
1060	AQIRTMSSSEAQ
1061	AQISNRTSSAQ
1062	AQISRQEVLAQ
1063	AQISSHSPGAQ
1064	AQISSRLSAQ
1065	AQISVSLRSAQ
1066	AQITGVPVMNAQ
1067	AQITRNADNAQ
1068	AQITSSTQFAQ
1069	AQITTRIEQAAQ
1070	AQIVKPNITAQ
1071	AQIVSRTEAQ
1072	AQIVVRGDSAQ
1073	AQIYSASTPAQ
1074	AQKGQPPFLAQ
1075	AQKHHVPFDAQ
1076	AQKLDLPMTAQ
1077	AQKLLGGLSAQ
1078	AQKLSLPTTAQ

TABLE 3-continued

Heart Sequences	
SEQ ID NO:	AA sequence (#587-597)
1079	AQKNGQPVQAQ
1080	AQKPYVPHDAQ
1081	AQKQRSEDPAQ
1082	AQKSGSMLVAQ
1083	AQKSQSLAGAQ
1084	AQKSQTSYMAQ
1085	AQKTTTSLAAQ
1086	AQLAGRAGAGAQ
1087	AQLAPIMREAQ
1088	AQLATTRVEAQ
1089	AQLDRANPQAQ
1090	AQLEHRSGSAQ
1091	AQLFGPLLQAQ
1092	AQLFSWRNAAQ
1093	AQLFTTSNIAQ
1094	AQLGHSLTSAQ
1095	AQLGHSSQIAQ
1096	AQLGNLGHQAQ
1097	AQLGRVQSDAQ
1098	AQLGSSVSAQ
1099	AQLHGPTLLAQ
1100	AQLHGVPVMNAQ
1101	AQLHHNRESAQ
1102	AQLHNFPDNAQ
1103	AQLHSIGTSAQ
1104	AQLHSSTLGAQ
1105	AQLIHNGAAAQ
1106	AQLKVGPMDAQ
1107	AQLKVPVLMAQ
1108	AQLLDHISKAQ
1109	AQLLPATRDAQ
1110	AQLNHGANAAQ
1111	AQLNHTRPGAQ
1112	AQLNSPSFLAQ
1113	AQLNSSLRASAQ
1114	AQLNSVKHYAQ

TABLE 3-continued

Heart Sequences	
SEQ ID NO:	AA sequence (#587-597)
1115	AQLNTTKTNAQ
1116	AQLPGRSTSAQ
1117	AQLPSYHSAAQ
1118	AQLQRSTDGAQ
1119	AQLQTYYSSAQ
1120	AQLRNSSGDAQ
1121	AQLRSLSAEAQ
1122	AQLSHSYSSAQ
1123	AQLSNSVKTAQ
1124	AQLSSHAYQAQ
1125	AQLSSRPDAAQ
1126	AQLSSRSAAQ
1127	AQLSSSYTVAQ
1128	AQLSTSYSSAQ
1129	AQLTHVSNIAQ
1130	AQLTTSVRIAQ
1131	AQLTTTRTEAQ
1132	AQLTVAGRSAQ
1133	AQMGSKSNEAQ
1134	AQMVKPVILLAQ
1135	AQMLAGRESAQ
1136	AQMNAGRSGAQ
1137	AQMNSSKPTAQ
1138	AQMNSVRTGAQ
1139	AQMNTSRSPAQ
1140	AQMNTTRVPAQ
1141	AQMPTKMTDAQ
1142	AQMRTGSNEAQ
1143	AQMRTLTGDAQ
1144	AQMRTSHTEAQ
1145	AQMRTSNLTAQ
1146	AQMSGHRQDAQ
1147	AQMSHSSGAAQ
1148	AQMSNRVLEAQ
1149	AQMSTTRSSAQ
1150	AQMTSKPESAQ

TABLE 3-continued

Heart Sequences	
SEQ ID NO:	AA sequence (#587-597)
1151	AQMVNVRVQSAQ
1152	AQMVRNSNDPAQ
1153	AQMYTTGQSAQ
1154	AQNAGRYGDAQ
1155	AQNGARTPPAQ
1156	AQNGQRRLSPAQ
1157	AQNGRVGSNAQ
1158	AQNGSATRVAQ
1159	AQNGSKLAGAQ
1160	AQNGSRVIAAQ
1161	AQNGTMRLAAQ
1162	AQNHRPSGDAQ
1163	AQNLANTRDAQ
1164	AQNLQPGKIAQ
1165	AQNLRGTSVAQ
1166	AQNLSSVNGAQ
1167	AQNRTGGFDAQ
1168	AQNRVAQGEAQ
1169	AQNSATMRQAQ
1170	AQNSDPYRFAQ
1171	AQNSHISRDAQ
1172	AQNSQTLRSAQ
1173	AQNSRAAEHAQ
1174	AQNSRGPVAAQ
1175	AQNSSHANSQAQ
1176	AQNSTQYNAAQ
1177	AQNTGHASMAQ
1178	AQNTGRSDSAQ
1179	AQNTNMPQYAQ
1180	AQNTSSVRGAQ
1181	AQNTVNVSGAQ
1182	AQNVAGRDLAQ
1183	AQNVSNLHGAQ
1184	AQNVSQLRDAQ
1185	AQNVTRGHEAQ
1186	AQNVYNVSGAQ

TABLE 3-continued

Heart Sequences	
SEQ ID NO:	AA sequence (#587-597)
1187	AQPARPNNPAQ
1188	AQPFTPCKPMAQ
1189	AQPGVGKQPAQ
1190	AQPHDSVMWAQ
1191	AQPINLPMSAQ
1192	AQPKSSHWEAQ
1193	AQPNNTIRGAQ
1194	AQPQKTGSAAQ
1195	AQPQSGPLPAQ
1196	AQPQSNRPAAQ
1197	AQPQSRGDSAQ
1198	AQPRRLPEVFAQ
1199	AQPRRTGTPPAQ
1200	AQPSHSQLFAQ
1201	AQPSRGQTAAQ
1202	AQPSRGQTTAQ
1203	AQPSSTDTFWAQ
1204	AQPSVTGRSAQ
1205	AQPSYGGSGAQ
1206	AQPTGLPINAQ
1207	AQPTQRTGTAQ
1208	AQPTRGTGTAQ
1209	AQPTSALPMAQ
1210	AQPVSRSPAAQ
1211	AQQAGRVSAAQ
1212	AQQAGSSVAAQ
1213	AQQASRNEIAQ
1214	AQQATRGDSAQ
1215	AQQDRILSAAQ
1216	AQQDSMRGLAQ
1217	AQQDTRSAAQ
1218	AQQGGLILLAQ
1219	AQQGSIRSDAQ
1220	AQQGYGGQTAQ
1221	AQQHAPSLLAQ
1222	AQQLPGGLHQAQ

TABLE 3-continued

Heart Sequences	
SEQ ID NO:	AA sequence (#587-597)
1223	AQQLSNKTNAQ
1224	AQQLSRDVPAQ
1225	AQQLVQHRDAQ
1226	AQQMRTGGIAQ
1227	AQQPGYSSDAQ
1228	AQQPRANQIAQ
1229	AQQPRTNESAQ
1230	AQQQLPVLMQAQ
1231	AQQRESPLDAQ
1232	AQQRHLPTDAQ
1233	AQQSAGKLGAQ
1234	AQOSLSSLSAQ
1235	AQOSNLPMTAQ
1236	AQOSNVYREAQ
1237	AQQTSLRQEAQ
1238	AQTTDRSGAQ
1239	AQQVGPILMAQ
1240	AQQVGSYQHAQ
1241	AQQVSTARPAQ
1242	AQQYGSVSQAQ
1243	AQQYSSGSSAQ
1244	AQRAGVSQIAQ
1245	AQRDTTYTTAQ
1246	AQRERSSEVAQ
1247	AQRGHGSSDAQ
1248	AQRGPLTLLAQ
1249	AQRGTLDLLAQ
1250	AQRIASPYDAQ
1251	AQRIGTATVVAQ
1252	AQRIGTMSAAQ
1253	AQRLPGGLSAQ
1254	AQRLTQHEPAQ
1255	AQRMSNGSTAQ
1256	AQRMSSSSDAQ
1257	AQRNHSAGDAQ
1258	AQRNLQPQVYAQ

TABLE 3-continued

Heart Sequences	
SEQ ID NO:	AA sequence (#587-597)
1259	AQRNYSPTEAQ
1260	AQRPEVPNWQAQ
1261	AQRPQGSAGAQ
1262	AQRPTMPEYAQ
1263	AQRSDRLTDAQ
1264	AQRSGMAVEAQ
1265	AQRSGSGSDAQ
1266	AQRSGSSADAQ
1267	AQRSNLLAEAQ
1268	AQRSNSSVGAQ
1269	AQRSTAIVAAQ
1270	AQRTGMTGAAQ
1271	AQRTGSVVNAQ
1272	AQRTGTQSSAQ
1273	AQRTIGTSTAQ
1274	AQRTSQUIQSAQ
1275	AQRVGASGTAQ
1276	AQRVGSSLSAQ
1277	AQRVPAGGGAQ
1278	AQRVSATQTAQ
1279	AQRVVGGLTAQ
1280	AQSALHVSGAQ
1281	AQSASLGYYAQ
1282	AQSASLRSDAQ
1283	AQSARVRSGAQ
1284	AQSDMPRTFAQ
1285	AQSDTRSMSAQ
1286	AQSFNHGATAQ
1287	AQSFTRIPPAQ
1288	AQSGNFSGGAQ
1289	AQSGSALHGAQ
1290	AQSGSRLLDHQ
1291	AQSGSSRDMAQ
1292	AQSGSSRPSAQ
1293	AQSGSYSTVVAQ
1294	AQSHEKFLYAQ

TABLE 3-continued

Heart Sequences	
SEQ ID NO:	AA sequence (#587-597)
1295	AQSHSASREAQ
1296	AQSHSNTGNAQ
1297	AQSIPGKGMAQ
1298	AQSIRSPLPAQ
1299	AQSISAGRVAQ
1300	AQSISGRSDAQ
1301	AQSISGRVGAQ
1302	AQSISRQSEAQ
1303	AQSISRSGYAQ
1304	AQSLAAEFWAQ
1305	AQSLDPLGLAQ
1306	AQSLIHSIWAQ
1307	AQSLNRVVEAQ
1308	AQSLQRSVDAQ
1309	AQSLSRDGTAQ
1310	AQSLVKSGQAQ
1311	AQSMSRLNEAQ
1312	AQSNTLRNVAQ
1313	AQSNYVRSPAQ
1314	AQSPRSNVTAQ
1315	AQSPRSSIGAQ
1316	AQSPVAPNWAQ
1317	AQSQALRADAQ
1318	AQSQGVRVPAQ
1319	AQSQKMLHGAQ
1320	AQSQPGPFNAQ
1321	AQSQSAKGPAQ
1322	AQSRGQTTDAQ
1323	AQSRGSETTAQ
1324	AQSRISNVSAQ
1325	AQSRQTGLTAQ
1326	AQSRSQATDAQ
1327	AQSRSTDGTAQ
1328	AQSRVGLSTAQ
1329	AQSSAGKSPAQ
1330	AQSSAGRRTGAQ

TABLE 3-continued

Heart Sequences	
SEQ ID NO:	AA sequence (#587-597)
1331	AQSSSATVREAQ
1332	AQSSDSRSSAQ
1333	AQSSGISRDAQ
1334	AQSSGPIILAQ
1335	AQSSH SANMAQ
1336	AQSSIVRQEAQ
1337	AQSSQNVSGAQ
1338	AQSSQRGHEAQ
1339	AQSSSSRGPAQ
1340	AQSSTVRNAAQ
1341	AQSSVT HSSAQ
1342	AQSSYQSNGAQ
1343	AQSTAARPVAQ
1344	AQSTGHNTQAQ
1345	AQSTGSSTSAQ
1346	AQSTGTPNWAQ
1347	AQSTHIARDAQ
1348	AQSTIVYREAQ
1349	AQSTMQNRIAQ
1350	AQSTNHGNNAQ
1351	AQSTQIHAGAQ
1352	AQSTQLRSGAQ
1353	AQSTRALQPAQ
1354	AQSTRSSDSAQ
1355	AQSTRTAPEAQ
1356	AQSTS NRPAQ
1357	AQSTS PPRPAQ
1358	AQSTS RLPAQ
1359	AQSTS SHTPAQ
1360	AQSTS SRTSAQ
1361	AQSTS SRTTAQ
1362	AQSTS SAPGAQ
1363	AQSTV TAVGAQ
1364	AQSV GELPFAQ
1365	AQSVPAKGSAQ
1366	AQSVRAGLNAQ

TABLE 3-continued

Heart Sequences	
SEQ ID NO:	AA sequence (#587-597)
1367	AQSVRSPVTAQ
1368	AQSVRSSDYAQ
1369	AQSVTRTVAAQ
1370	AQSVYSHSSAQ
1371	AQSYAPQLLAQ
1372	AQSYSNRSVAQ
1373	AQTAAVRSGAQ
1374	AQTALKAVGAQ
1375	AQTANTRAEEAQ
1376	AQTASQLSAAQ
1377	AQTDRITISAQ
1378	AQTDTRHATAQ
1379	AQTERNTASAQ
1380	AQTFHAVKEAQ
1381	AQTGSLAHGAQ
1382	AQTIGMRSAAQ
1383	AQTINKPNAAQ
1384	AQTISNSSGAQ
1385	AQTITRGTDQAQ
1386	AQTLQNVNYAQ
1387	AQTLSSSREAQ
1388	AQTMGRNVSAQ
1389	AQTQGNRTDAQ
1390	AQTQHSTQSAQ
1391	AQTQSAYGSAQ
1392	AQTQSLRHDAQ
1393	AQTQTDHSQAQ
1394	AQTQTNIGRAQ
1395	AQTRHSSSDAQ
1396	AQTRSSSEAAQ
1397	AQTRSTIQEAQ
1398	AQTSATYSGAQ
1399	AQTSGTRHEAQ
1400	AQTSHAPNNAQ
1401	AQTSHSSVVAQ
1402	AQTSHVSSAAQ

TABLE 3-continued

Heart Sequences	
SEQ ID NO:	AA sequence (#587-597)
1403	AQTSILRNEAQ
1404	AQTSNSSGQAAQ
1405	AQTSNYGATAQ
1406	AQTSQSRVEAQ
1407	AQTSRANDTAQ
1408	AQTSRSNETAQ
1409	AQTTSPNKIAQ
1410	AQTSYSTTTAQ
1411	AQTTARNLEAQ
1412	AQTTGILRDAQ
1413	AQTTGTPRPAQ
1414	AQTTGYSQAAQ
1415	AQTTIRNAVAAQ
1416	AQTTNITRTAQ
1417	AQTTSMGKVAQ
1418	AQTTMSGHQAQ
1419	AQTTSPKLPAQ
1420	AQTTSSSYNAQ
1421	AQTTSTHNAAQ
1422	AQTTSVRSTAQ
1423	AQTTTAGKVAQ
1424	AQTTTKFTPAAQ
1425	AQTVITASGAAQ
1426	AQTVQSHSTAQ
1427	AQTVSSGRPAQ
1428	AQTYNATRSAQ
1429	AQVAGRNVSAQ
1430	AQVAGTSQGAQ
1431	AQVAGYSRDAQ
1432	AQVATPSFLAQ
1433	AQVFTNRSAAQ
1434	AQVGHGSLPAQ
1435	AQVGGSYSRDAQ
1436	AQVGTLSSSAQ
1437	AQVGVNHHGAQ
1438	AQVIRGLEQAAQ

TABLE 3-continued

Heart Sequences	
SEQ ID NO:	AA sequence (#587-597)
1439	AQVISRDSSAQ
1440	AQVISSHSAQ
1441	AQVKANQATAQ
1442	AQVLHASMSAQ
1443	AQVLHGSSYAQ
1444	AQVLRNSNVMAQ
1445	AQVNLPVLLAQ
1446	AQVPGHSGLAQ
1447	AQVPGQSSLQAQ
1448	AQVPRSSTDQAQ
1449	AQVPRTGLTAQ
1450	AQVPTSHSTAQ
1451	AQVQSHGVNAQ
1452	AQVQYGGLTAQ
1453	AQVRGLYSDAQ
1454	AQVRHSGMEAQ
1455	AQVRPPNPSAQ
1456	AQVRSTLTDAQ
1457	AQVRSVGLDAQ
1458	AQVRTPLFQAQ
1459	AQVRTSYSDAQ
1460	AQVSGIRGDAQ
1461	AQVSGRSLSAQ
1462	AQVSNSYLGAQ
1463	AQVSNTYSGAQ
1464	AQVSRSESAQ
1465	AQVSSYPNSAQ
1466	AQVTGLRGIAQ
1467	AQVTHASLSAQ
1468	AQVTQLGRSAQ
1469	AQVTRSAGEAQ
1470	AQVTSKNDLQAQ
1471	AQVTTKTQLAQ
1472	AQVVANTSRAQ
1473	AQVVGSNREAQ
1474	AQVVRSRGNEAQ

TABLE 3-continued

Heart Sequences	
SEQ ID NO:	AA sequence (#587-597)
1475	AQVVRSVNDAQ
1476	AQVV RTPNSAQ
1477	AQWGSHPTGAQ
1478	AQWLKS VSSAQ
1479	AQWRHTS AEAQ
1480	AQYAGNS GNAQ
1481	AQYASSN NAQ
1482	AQYERNH NAAQ
1483	AQYKSSLSEAQ
1484	AQYLHGL QQAQ
1485	AQYNQIRGDAQ
1486	AQYNSSNFGAQ
1487	AQYPGNR MEAQ
1488	AQYRNTVQDAOQ
1489	AQYRQSSSDAQ
1490	AQYRSGTQE AQ
1491	AQYTGSISVAQ
1492	AQYTSSVTG AQ
1493	AQYVASSPMAQ
1494	AQYVGSGTAAQ
1495	AQYVHSNNAAQ
1496	AQYYSSSGGAQ

DETAILED DESCRIPTION OF THE DISCLOSURE

[0013] In certain aspects the disclosure provides modified rAAVs with increased expression levels in the brain, heart, or brain and heart when compared to a parent AAV (e.g., AAV9).

[0014] In certain aspects, the disclosure provides rAAVs with a peptide insertion and or substitution comprising or consisting of an amino-acid sequence set forth in any one of Tables 1-3.

[0015] In certain embodiments, the parental AAV is AAV9. In some embodiments, the parental AAV comprises SEQ ID NO: 1. In various embodiments, the AAV capsid protein comprises a 7-mer insertion inserted into the parental AAV between amino acid 588 and amino acid 589 of the parent AAV, wherein positions 587-597 of the mutant AAV capsid protein (with AA position numbering including the insertion) are selected from the sequence provided in Tables 1-3 or selected from the group consisting of SEQ ID NO: 2-1496.

[0016] Generally, the insertion comprises a seven-amino acid sequence (7-mer) that is inserted or substituted at the 588 loop in a parental AAV capsid protein. Aspects provided herein provide amino acid insertions comprising seven amino acid polymer (7-mer) inserted at AA588-589 to produce an eleven amino acid polymer (11-mer) at the 588 loop of a parental AAV capsid protein.

[0017] Also disclosed herein are methods and kits for producing therapeutic recombinant AAV (rAAV) particles, as well as methods and pharmaceutical compositions or formulations comprising the rAAV particles, for the treatment of a disease or condition affecting the brain, heart, or brain and heart.

[0018] Disclosed herein are AAV capsids engineered with increased viral transduction in the brain, heart, or brain and heart. Disclosed further herein AAV capsids engineered with increased viral transduction in the heart. Advantageously, disclosed herein are AAV capsids engineered with increased viral transduction in the brain, heart, or brain and heart.

[0019] The AAV capsids can encapsidate a viral vector with a heterologous nucleic acid encoding, for example, a therapeutic gene expression product. Transduction of the heterologous nucleic acid in the brain, heart, or brain and heart can be achieved upon systemic delivery to a subject of the AAV capsid of the present disclosure encapsidating a heterologous nucleic acid. The AAV capsids disclosed herein are advantageous for many applications of gene therapy to treat human disease, including, but not limited to, disorders of the brain and/or heart.

[0020] The recombinant AAV vectors comprising a nucleic acid sequence encoding the AAV capsid proteins of the present disclosure as also provided herein. For example, the viral vectors of the present disclosure comprise a nucleic acid sequence comprising the AAV viral Cap (Capsid) encoding VP1, VP2, and VP3, at least one of which is modified to produce the AAV capsid proteins of the present disclosure. The recombinant AAV vector provided can be derived from an AAV serotype (e.g., AAV9) or a variant AAV serotype including an insertion of the present invention.

AAV Capsids

[0021] Provided herein are modified adeno-associated (AAV) virus capsid compositions useful for integrating a transgene into a target cell or environment (in a subject when they are administered systemically to the subject).

[0022] An rAAV comprises an AAV capsid that can be engineered to encapsidate a heterologous nucleic acid (e.g., therapeutic nucleic acid, gene editing machinery). The AAV capsid is made up of three AAV capsid protein monomers, VP1, VP2, and VP3. Sixty copies of these three VP proteins interact in a 1:1:10 ratio to form the viral capsid. VP1 covers the whole of VP2 protein in addition to a ~137 amino acid N-terminal region (VP1u), VP2 covers the whole of VP3 in addition to ~65 amino acid N-terminal region (VP1/2 common region). The three capsid proteins share a conserved amino acid sequence of VP3, which in some cases is the region beginning at amino acid position 138 (e.g., AA139-736).

[0023] While not wishing to be bound by theory, it is understood that a parent AAV capsid sequence comprises a VP1 region. In certain embodiments, a parent AAV capsid sequence comprises a VP1, VP2 and/or VP3 region, or any

combination thereof. A parent VP1 sequence may be considered synonymous with a parent AAV capsid sequence.

[0024] The AAV VP3 structure contains highly conserved regions that are common to all serotypes, a core eight-stranded β -barrel motif (β B- β I) and a small α -helix (α A). The loop regions inserted between the β -strands consist of the distinctive HI loop between β -strands H and I, the DE loop between β -strands D and E, and nine variable regions (VRs), which form the top of the loops. These VRs, such as the AA588 loop, are found on the capsid surface and can be associated with specific functional roles in the AAV life cycle including receptor binding, transduction and antigenic specificity.

[0025] In some aspects, the rAAV variant of the present invention comprises an AAV capsid protein having a peptide insertion at the residues corresponding to amino acids 588-589 of the AAV9 native sequence of SEQ ID NO: 1.

[0026] The AAV capsids comprise AAV capsid proteins (e.g., VP1, VP2, and VP3), each with an insertion, such as in the 588 loop of a parental AAV capsid protein structure (AAV9 VP1 numbering). The 588 loop contains the site of heparan sulfate binding of AAV2 and is amenable to peptide display. The only known receptors for AAV9 is N-linked terminal galactose and AAV receptor (AAVR), but many indications point toward there being others. Modifications to AAV9 588 loop are shown herein to confer an increased transgene transduction in target *in vivo* environments.

[0027] The present invention provides, in an aspect, a peptide insertion at the AAV 588 loop comprising or consisting of an amino-acid sequence set forth in any one of Tables 1-3.

[0028] Disclosed herein are AAV capsids comprising AAV capsid proteins with an insertion at the 588 loop that confer a higher transduction in brain cell types (e.g., brain endothelial cells, neurons, astrocytes) and/or heart cell types (e.g., cardiomyocytes, vascular cells, stromal cells, mesothelial cells). In particular, the AAV capsid proteins disclosed herein enable rAAV-mediated transduction of a heterologous nucleic acid (e.g., transgene) in the brain, heart, or brain and heart of a subject. The AAV capsids of the present disclosure may be formulated as a pharmaceutical composition. In addition, the AAV capsids can be isolated and purified to be used for a variety of applications.

[0029] In some embodiments, the rAAV capsid of the present disclosure are generated using the methods disclosed herein. In some instances, the rAAV capsid is chimeric. In some instances, the rAAV, or variant AAV protein comprises therein, confer an increase in a localization of the rAAV within the target tissue, as compared to the parental AAV capsid or capsid protein.

AAV Capsid Proteins

[0030] Disclosed herein are recombinant AAV (rAAV) capsids which comprise AAV capsid proteins that are engineered with a modified capsid protein (e.g., VP1, VP2, VP3). In some embodiments, the rAAV capsid proteins of the present disclosure are generated using the methods disclosed herein. In some embodiments, the AAV capsid proteins are used in the methods of delivering a therapeutic nucleic acid (e.g., a transgene) to a subject. In some instances, the rAAV capsid proteins have desired AAV expression rendering them particularly suitable for certain therapeutic applications, e.g., the treatment of a disease or disorder in a subject such as those disclosed herein.

[0031] The rAAV capsid proteins may be engineered for optimized expression in the CNS, for example the brain, of a subject upon systemic administration of the rAAV to the subject. The rAAV capsid proteins are engineered to include the insertions provided in Tables 1-2. The rAAV capsid proteins including the insertions provided in Tables 1-2 are engineered to achieve efficient transduction of an encapsidated transgene. In particular, the rAAV capsid proteins have increased expression in the brain of a subject.

[0032] The rAAV capsid proteins may also be engineered for optimized expression in the heart of a subject upon systemic administration of the rAAV to the subject. The rAAV capsid proteins are engineered to include the insertions provided in Tables 2-3. The rAAV capsid proteins including the insertions provided in Tables 2-3 are engineered to achieve efficient transduction of an encapsidated transgene. In particular, the rAAV capsid proteins have increased expression in the heart of a subject.

[0033] The rAAV capsid proteins may also be engineered for optimized expression in the brain and heart of a subject upon systemic administration of the rAAV to the subject. The rAAV capsid proteins are engineered to include the insertions provided in Table 2. The rAAV capsid proteins including the insertions provided in Table 2 are engineered to achieve efficient transduction of an encapsidated transgene. In particular, the rAAV capsid proteins have increased expression in the brain and heart of a subject.

[0034] The engineered AAV capsid proteins described herein have, in some cases, an insertion of an amino acid that is heterologous to the parental AAV capsid protein at amino acid positions in the 588 loop. In some embodiments, the amino acid is not endogenous to the parental AAV capsid protein at the amino acid position of the insertion. The amino acid may be a naturally occurring amino acid in the same or equivalent amino acid position as the insertion of the substitution in a different AAV capsid protein.

[0035] The 7-mers described herein were advantageously generated using polymerase chain reaction (PCR) with degenerate primers, where each of the seven amino acids is encoded by a deoxyribose nucleic acid (DNA) sequence. This method of generating random 7-mer amino acid sequences enables sampling of the 207 (1.28 billion) possible 7mer amino acid combinations at the protein level.

[0036] The rAAV capsid proteins of the present disclosure comprise an insertion of an amino acid in an amino acid sequence of an AAV capsid protein. The AAV capsid, from which an engineered AAV capsid protein of the present disclosure is produced, is referred to as a “parental” AAV capsid. The complete genome of AAV-1 is provided in GenBank Accession No. NC_002077; the complete genome of AAV-2 is provided in GenBank Accession No. NC_001401 and Srivastava et al., J. Virol., 45:555-564 (1983); the complete genome of AAV-3 is provided in GenBank Accession No. NC_1829; the complete genome of AAV-4 is provided in GenBank Accession No. NC_001829; the AAV-5 genome is provided in GenBank Accession No. AF085716; the complete genome of AAV-6 is provided in GenBank Accession No. NC_001862; at least portions of AAV-7 and AAV-8 genomes are provided in GenBank Accession Nos. AX753246 and AX753249, respectively; the AAV-9 genome is provided in Gao et al., J. Virol., 78:6381-6388 (2004); the AAV-10 genome is provided in Mol. Ther., 13 (1): 67-76 (2006); the AAV-11 genome is provided in Virology, 330(2): 375-383 (2004); portions of the AAV-12

genome are provided in Genbank Accession No. DQ813647; portions of the AAV-13 genome are provided in Genbank Accession No. EU285562.

[0037] In some cases, the parental AAV is derived from an AAV with a serotype selected from AAV1, AAV2, AAV3, AAV4, AAV5, AAV6, AAV7, AAV8, AAV9, AAV10, AAV11 and AAV12. The AAV capsid protein that is “derived” from another may be a variant AAV capsid protein. A variant may include, for example, a heterologous amino acid in an amino acid sequence of the AAV capsid protein. The heterologous amino acid may be non-naturally occurring in the AAV capsid protein. The heterologous amino acid may be naturally occurring in a different AAV capsid protein. In some instances, the parental AAV capsid is described in US Pat Publication 2020/0165576 and U.S. Pat. App. Ser. No. 62/832,826 and PCT/US20/20778; the content of each of which is incorporated herein.

[0038] In some instances, the parental AAV is AAV9. In some instances, the amino acid sequence of the AAV9 capsid protein comprises SEQ ID NO: 1. The amino acid sequence of AAV9 VP1 capsid protein is provided in SEQ ID NO: 1

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(MAADGYLPDWLEDNLSEGIREWWALKPGAPQPKANQQHQNARGLVLPLP
GYKYLGPNGNGLDKGEVPNAADAAALEHDKAYDQLKAGDNPNLYKYNHAD
AEPQERLKEDTSFGGNLGRAVFPQAKKRLLEPLGLVEEAAKTAPGKKRPV
EQSPQEPDSSAGIGKSGAQPAKRLNFGQTGDTESVPDPQPIGEPPAAP
SGVGSLTMASGGGAPVADNNNEGADGVGSSSGNWHDQSQWLGDRVITST
RTWALPTYNNHLYKQISNSTSGSSNDNAYFGYSTPWGYFDENRFHCFF
SPRDWQLRINNNWGFRPKRLNFKLFNIQVKEVTDNNGVKTIANNLTSTV
QVPTDSDYQLPYVLGSAHEGCLPPPADVFMIPQYGYTLNDGSQAVGR
SSFYCLEYFPSQMLRTGNNFQFSYEFENVPFHSSYAHQSLSDRLMNPILI
DQYLYYLSKTINGSGQNQQLKFSVAGPSNMAVQGRNYIPGPSYRQQRV
STTVTQNNNSEFAWPAGASSWALNGRNLSMNPGPAMASHKEGEDRFFPLS
GSLIFGKQGTGRDNVDADKVMITNEEEIKTTNPVATESYGQVATNHQSA
QAQAQTGWVQNQGILPGMVWQDRDVYLQGPIWAKIPTHDGNFHPSPLMG
GFGMKHPPPQILIKNTPVADPPTAFNFKDKLNSFITQYSTGQVSVEIEW
ELQKENSKRWNPEIQYTSNYYKSNNVEFAVNTEGVSEPRPIGTRYLTLR
NL).
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[0039] In some instances, the parental AAV capsid protein sequence is 70%, 75%, 80%, 85%, 90%, 91%, 92%, 93%, 94%, 95%, 96%, 97%, 98%, 99%, or 100% homologous to SEQ ID NO: 1.

[0040] AAV capsid proteins from native AAV serotypes, such as AAV9, with tropisms including the liver activate the innate immune response, which in some cases causes a severe inflammatory response in a subject, which can lead to multi-organ failure. By improving transduction of a native AAV serotype for a target in vivo tissue (e.g., brain and/or heart) the rAAV particles of the present disclosure reduce the immunogenic properties of AAV-mediated transgene delivery and prevent activation of the innate immune response. Moreover, with increased transduction efficiency, the amount of the AAV composition needed to be delivered for effective transgene expression can be reduced. By reducing

the total volume of the transgene delivered, off-target delivery and expression of the transgene is reduced.

[0041] In some instances, the parental AAV capsid protein comprises the entire VP1 region provided in SEQ ID NO: 1 (e.g., amino acids 1-736). In some instances, the parental AAV capsid protein comprises amino acids 217-736 in SEQ ID NO: 1, which is the common region found in VP1, VP2 and VP3 AAV9 capsid proteins. In some instances, the AAV capsid protein comprises amino acids 64-736 in SEQ ID NO: 1, which is the common region found in VP1 and VP2. The parental AAV capsid protein sequence may comprise amino acids selected from 1-736, 10-736, 20-736, 30-736, 40-736, 50-736, 60-736, 70-736, 80-736, 90-736, 100-736, 110-736, 120-736, 130-736, 140-736, 150-736, 160-736, 170-736, 180-736, 190-736, 200-736, 210-736, 220-736, 230-736, 240-736, 250-736, 260-736, 270-736, 280-736, 290-736, 300-736, 310-736, 320-736, 330-736, 340-736, 350-736, 360-736, 370-736, 380-736, 390-736, 400-736, 410-736, 420-736, 430-736, 440-736, and 450-736, from SEQ ID NO: 1. In some aspects, the rAAV variant comprises an AAV capsid protein comprising an amino acid sequence that is at least 98% identical to amino acid 217 to amino acid 736 of SEQ ID NO: 1. In some instances, the amino acid insertion is at a three (3)-fold axis of symmetry of a corresponding parental AAV capsid protein.

[0042] Disclosed herein are insertions of an amino acid sequence in an AAV capsid protein. Where the sequence numbering designation “588-589” is noted for AAV9, for example AAV VP1, the invention also includes insertions in similar locations in the other AAV serotypes. As used herein, “AA588-589” indicates that the insertion of the amino acid (or amino acid sequence) is immediately after an amino acid (AA) at position 588 and immediately before an AA at position 589 within an amino acid sequence of a parental AAV VP capsid protein (VP1 numbering). Amino acids 587-591 include a motif comprising “AQAAQ” as set forth in SEQ ID NO: 1. It is envisioned that the sequences disclosed herein (Tables 1-3) may be inserted at AA588-589 in an amino acid sequence of a parental AAV9 capsid protein, a variant thereof, or equivalent amino acid position of a parental AAV of a different serotype (e.g., AAV1, AAV2, AAV3, and the like). In certain embodiments, the aforementioned “AQAAQ” sequence flanking the insertion may include one or more substitutions.

[0043] The insertions described herein may, in some cases, comprise a 7-mer insertion at AA588-589.

[0044] Disclosed herein are AAV capsid proteins with an insertion described above in a parental AAV capsid protein that confers an increased transduction in the brain, heart, or brain and heart in a subject, even when delivered systemically. One of the many advantages of the AAV capsid proteins described herein is their ability to target tissue and cells within the brain, heart, or brain and heart. The tissue can be the brain, heart, or brain and heart.

[0045] Non-limiting examples of brain cells include a neuron and a glial cell. Glial cells can be selected from an oligodendrocyte, an ependymal cell, an astrocyte and a microglia.

[0046] Non-limiting examples of heart cells include cardiomyocytes, vascular cells, stromal cells, mesothelial cells

[0047] In some instances, the AAV capsid protein comprises an insertion/substitution of at least or about seven, eight, nine, ten or eleven amino acids of an amino acid

sequence of Tables 1-3 at an amino acid position 588-589 in a parental AAV9 capsid protein (SEQ ID NO: 1).

[0048] In some cases, the AAV capsid protein has an increased viral transduction enrichment in brain, heart, or brain and heart.

[0049] The rAAV capsid proteins described herein may be isolated and purified. The AAV may be isolated and purified by methods standard in the art such as by column chromatography, iodixanol gradients, or cesium chloride gradients. Methods for purifying AAV from helper virus are known in the art and may include methods disclosed in, for example, Clark et al., *Hum. Gene Ther.*, 10 (6): 1031-1039 (1999); Schenpp and Clark, *Methods Mol. Med.*, 69:427-443 (2002); U.S. Pat. No. 6,566,118 and WO 98/09657.

[0050] In addition, the AAV capsid proteins disclosed herein, either isolated and purified, or not, may be formulated into a pharmaceutical formulation, which in some cases, further comprises a pharmaceutically acceptable carrier.

[0051] The rAAV capsid protein can be conjugated to a nanoparticle, a second molecule, or a viral capsid protein. In some cases, the nanoparticle or viral capsid protein would encapsidate the therapeutic nucleic acid described herein. In some instances, the second molecule is a therapeutic agent, e.g., a small molecule, antibody, antigen-binding fragment, peptide, or protein, such as those described herein.

[0052] “Percent Identity” is the percent of the symbols that actually match. Percent Similarity is the percent of the symbols that are similar. Symbols that are across from gaps are ignored. A similarity is scored when the scoring matrix value for a pair of symbols is greater than or equal to 0.50, the similarity threshold. The scoring matrix used in Version 10 of the Wisconsin Genetics Software Package is BLOSUM62 (see: Henikoff and Henikoff, (1989) *Proc. Natl. Acad. Sci. USA* 89:10915).

[0053] Sequence identity/similarity values provided herein can refer to the value obtained using the BLAST+ 2.5.0 suite of programs using default settings (blast.ncbi.nlm.nih.gov) (Camacho, C., et al. (2009) BLAST+: architecture and applications. *BMC Bioinformatics* 10:421).

[0054] As those of ordinary skill in the art will understand, BLAST searches assume that proteins can be modeled as random sequences. However, many real proteins comprise regions of nonrandom sequences, which may be homopolymeric tracts, short-period repeats, or regions enriched in one or more amino acids. Such low-complexity regions may be aligned between unrelated proteins even though other regions of the protein are entirely dissimilar. A number of low-complexity filter programs can be employed to reduce such low-complexity alignments. For example, the SEG (Wooten and Federhen, (1993) *Comput. Chem.* 17:149-63) and XNU (Ci-ayerie and States (1993) *Comput. Chem.* 17:191-201) low-complexity filters can be employed alone or in combination.

[0055] The terms “substantial identity” and “substantially identical” indicate that a polypeptide or nucleic acid comprises a sequence with between 55-100% sequence identity to a reference sequence, with at least 55% sequence identity, or at least 60%, or at least 65%, or at least 70%, or at least 75%, or at least 80%, or at least 85%, or at least 90%, or at least 95%, or at least 99% sequence identity or any percentage of value within the range of 55-100% sequence identity relative to the reference sequence. The percent sequence identity may occur over a specified comparison window.

Optimal alignment may be ascertained or conducted using the homology alignment algorithm of Needleman and Wun-sch, *supra*.

[0056] For example, the insertion sequences may include, but are not limited to, sequences that are not exactly the same as the sequences disclosed herein, but which have, in addition to the substitutions explicitly described for various sequences listed herein, additional substitutions of amino acid residues which substantially do not impair the activity or properties of the sequences described herein, such as those predicted by homology software e.g. BLOSUM62 matrices.

AAV Particles

[0057] The rAAV particles with the insertion sequences described herein have an increased transduction enrichment in the brain, heart, or brain and heart. In some instances, the increased transduction enrichment comprises a 1-fold, 2-fold, 3-fold, 4-fold, 5-fold, 6-fold, 7-fold, 8-fold, 9-fold or 10-fold increase, or more. In some instances, the increased transduction enrichment is at least 1-fold. In some instances, the increased transduction enrichment is at least 2-fold. In some instances, the increased transduction enrichment is at least 4-fold.

[0058] The rAAV particles with the insertion sequences described herein have an increased expression enrichment in the brain. Detecting whether a rAAV possesses more or less specificity for a target *in vivo* environment, includes measuring a level of gene expression product (e.g., RNA or protein) expressed from the heterologous nucleic acid encapsidated by the rAAV in a tissue sample obtained from a subject. Suitable methods for measuring expression of a gene expression product include next-generation sequencing (NGS) and quantitative polymerase chain reaction (qPCR).

[0059] The increased expression in the brain, heart, or brain and heart is represented by the enrichment values provided in Tables 1-3

Heterologous Nucleic Acids

[0060] Disclosed herein are therapeutic nucleic acids useful for the treatment or prevention of a disease or condition, or symptom of the disease or condition. In some embodiments, the therapeutic nucleic acids encode a therapeutic gene expression product. Non-limiting examples of gene expression products include proteins, polypeptides, peptides, enzymes, antibodies, antigen binding fragments, nucleic acid (RNA, DNA, antisense oligonucleotide, siRNA, and the like), and gene editing components, for use in the treatment, prophylaxis, and/or amelioration of the disease or disorder, or symptoms of the disease or disorder. In some instances, the therapeutic nucleic acids are placed in an organism, cell, tissue or organ of a subject by way of a rAAV, such as those disclosed herein.

[0061] Disclosed herein are rAAVs, each comprising a viral vector (e.g., a single stranded DNA molecule (ssDNA)). In some instances, the viral vector comprises two inverted terminal repeat (ITR) sequences that are about 145 bases each, flanking a transgene. In some embodiments, the transgene comprises a therapeutic nucleic acid, and in some cases, a promoter in *cis* with the therapeutic nucleic acid in an open reading frame (ORF). The promoter is capable of initiating transcription of therapeutic nucleic acid in the nucleus of the target cell. The ITR sequences can be from

any AAV serotype. Non-limiting examples of AAV serotypes include AAV1, AAV2, AAV3, AAV4, AAV5, AAV6, AAV7, AAV8, AAV9, AAV10, AAV11, and AAV12. In some cases, an ITR is from AAV2. In some cases, an ITR is from AAV9.

[0062] Disclosed herein are transgenes that can comprise any number of nucleotides. In some cases, a transgene can comprise less than about 100 nucleotides. In some cases, a transgene can comprise at least about 100 nucleotides. In some cases, a transgene can comprise at least about 200 nucleotides. In some cases, a transgene can comprise at least about 300 nucleotides. In some cases, a transgene can comprise at least about 400 nucleotides. In some cases, a transgene can comprise at least about 500 nucleotides. In some cases, a transgene can comprise at least about 1000 nucleotides. In some cases, a transgene can comprise at least about 5000 nucleotides. In some cases, a transgene can comprise over 5,000 nucleotides. In some cases, a transgene can comprise between about 500 and about 5000 nucleotides. In some cases, a transgene comprises about 5000 nucleotides. In any of the cases disclosed herein, the transgene can comprise DNA, RNA, or a hybrid of DNA and RNA. In some cases, the transgene can be single stranded. In some cases, the transgene can be double stranded.

[0063] Disclosed herein are transgenes useful for modulating the expression or activity of a target gene or gene expression product thereof. In some instances, the transgene is encapsidated by an rAAV capsid protein of an rAAV particle described herein. In some instances, the rAAV particle is delivered to a subject to treat a disease or condition disclosed herein in the subject. In some instances, the delivery is systemic.

[0064] The transgenes disclosed herein are useful for expressing an endogenous gene at a level similar to that of a healthy or normal individual. This is particularly useful in the treatment of a disease or condition related to the under-expression, or lack of expression, of a gene expression product. In some embodiments, the transgenes disclosed herein are useful for overexpressing an endogenous gene, such that an expression level of the endogenous gene is above the expression level of a healthy or normal individual. Additionally, transgenes can be used to express exogenous genes (e.g., active agent such as an antibody, peptide, nucleic acid, or gene editing components). In some embodiments, the therapeutic gene expression product is capable of altering, enhancing, increasing, or inducing the activity of one or more endogenous biological processes in the cell. In some embodiments, the transgenes disclosed herein are useful for reducing expression of an endogenous gene, for example, a dominant negative gene. In some embodiments, the therapeutic gene expression product is capable of altering, inhibiting, reducing, preventing, eliminating, or impairing the activity of one or more endogenous biological processes in the cell. In some aspects, the increase of gene expression refers to an increase by at least about 20%, 30%, 40%, 50%, 60%, 70%, 80%, 85%, 90%, 95% and 100%. In certain aspects, the protein product of the targeted gene may be increased by at least about 20%, 30%, 40%, 50%, 60%, 70%, 80%, 85%, 90%, 95% and 100%. In some aspects, the decrease of gene expression refers to an increase by at least about 20%, 30%, 40%, 50%, 60%, 70%, 80%, 85%, 90%, 95% and 100%. In certain aspects, the protein product of the targeted gene may be decreased by at least about 20%, 30%, 40%, 50%, 60%, 70%, 80%, 85%, 90%, 95% and 100%.

[0065] When endogenous sequences (endogenous or part of a transgene) are expressed with a transgene, the endogenous sequences can be full-length sequences (wild-type or mutant) or partial sequences. The endogenous sequences can be functional. Non-limiting examples of the function of these full length or partial sequences include increasing the serum half-life of the polypeptide expressed by a transgene (e.g., therapeutic gene) and/or acting as a carrier.

[0066] A transgene can be inserted into an endogenous gene such that all, some or none of the endogenous gene is expressed. For example, a transgene as described herein can be inserted into an endogenous locus such that some (N-terminal and/or C-terminal to a transgene) or none of the endogenous sequences are expressed, for example as a fusion with a transgene. In other cases, a transgene (e.g., with or without additional coding sequences of the endogenous gene) is integrated into any endogenous locus, for example a safe-harbor locus. For example, a Frataxin (FXN) transgene can be inserted into an endogenous FXN gene. A transgene can be inserted into any gene, e.g., the genes as described herein.

[0067] At least one advantage of the present disclosure is that virtually any therapeutic nucleic acid may be used to express any therapeutic gene expression product. In some instances, the therapeutic gene expression product is a therapeutic protein or a peptide (e.g., antibody, antigen-binding fragment, peptide, or protein). In one embodiment the protein encoded by the therapeutic nucleic acid is between 50-5000 amino acids in length. In some embodiments the protein encoded is between 50-2000 amino acids in length. In some embodiments the protein encoded is between 50-1000 amino acids in length. In some embodiments the protein encoded is between 50-1500 amino acids in length. In some embodiments the protein encoded is between 50-800 amino acids in length. In some embodiments the protein encoded is between 50-600 amino acids in length. In some embodiments the protein encoded is between 50-400 amino acids in length. In some embodiments the protein encoded is between 50-200 amino acids in length. In some embodiments the protein encoded is between 50-100 amino acids in length. In some embodiments the peptide encoded is between 4-50 amino acids in length. In some embodiments, the protein encoded is a tetrapeptide, a pentapeptide, a hexapeptide, a heptapeptide, an octapeptide, a nonapeptide, or a decapeptide. In some embodiments, the protein encoded comprises a peptide of 2-30 amino acids, such as for example 5-30, 10-30, 2-25, 5-25, 10-25, or 10-20 amino acids. In some embodiments, the protein encoded comprises a peptide of at least 11, 12, 13, 14, 15, 17, 20, 25 or 30 amino acids, or a peptide that is no longer than 50 amino acids, e.g. no longer than 35, 30, 25, 20, 17, 15, 14, 13, 12, 11 or 10 amino acids.

[0068] Non-limiting examples of therapeutic protein or peptides include an adrenergic agonist, an anti-apoptosis factor, an apoptosis inhibitor, a cytokine receptor, a cytokine, a cytotoxin, an erythropoietic agent, a glutamic acid decarboxylase, a glycoprotein, a growth factor, a growth factor receptor, a hormone, a hormone receptor, an interferon, an interleukin, an interleukin receptor, a kinase, a kinase inhibitor, a nerve growth factor, a netrin, a neuroactive peptide, a neuroactive peptide receptor, a neurogenic factor, a neurogenic factor receptor, a neuropilin, a neurotrophic factor, a neurotrophin, a neurotrophin receptor, an N-methyl-D-aspartate antagonist, a plexin, a protease, a

protease inhibitor, a protein decarboxylase, a protein kinase, a protein kinase inhibitor, a proteolytic protein, a proteolytic protein inhibitor, a semaphoring, a semaphorin receptor, a serotonin transport protein, a serotonin uptake inhibitor, a serotonin receptor, a serpin, a serpin receptor, and a tumor suppressor. In certain embodiments, the therapeutic protein or peptide is selected from brain-derived neurotrophic factor (BDNF), ciliary neurotrophic factor (CNTF), macrophage colony-stimulating factor (CSF), epidermal growth factor (EGF), fibroblast growth factor (FGF), gonadotropin, interferon-gamma (IFN), insulin-like growth factor 1 (IGF-1), nerve growth factor (NGF), platelet-derived growth factor (PDGF), pigment epithelium-derived factor (PEDF), transforming growth factor (TGF), transforming growth factor-beta (TGF-B), tumor necrosis factor (TNF), vascular endothelial growth factor (VEGF), prolactin, somatotropin, X-linked inhibitor of apoptosis protein 1 (XIAP1), interleukin 1 (IL-1), IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-10, viral IL-10, IL-11, IL-12, IL-13, IL-14, IL-15, IL-16, IL-17, and IL-18.

[0069] A therapeutic gene expression product can comprise gene editing components. Non-limiting examples of gene editing components include those required for CRISPR/Cas, artificial site-specific RNA endonuclease (ASRE), zinc finger endonuclease (ZFN), and transcription factor like effector nuclease (TALEN). In a non-limiting example, a subject having Huntington's disease is identified. The subject is then systemically administered a first amount of a rAAV encapsidating a viral vector encoding ZFN engineered to represses the transcription of the Huntingtin (HTT) gene. The rAAV will include a modified AAV capsid protein that includes an amino acid sequence provided in any one of Tables 1-3, so as to allow proper targeting of the ZFN to the brain and/or heart system. If needed, the subject is administered a second or third dose of the rAAV, until a therapeutically effective amount of the ZFN is expressed in the subject's nervous system.

[0070] A therapeutic nucleic acid can comprise a non-protein coding gene e.g., sequences encoding antisense RNAs, RNAi, shRNAs and micro RNAs (miRNAs), miRNA sponges or decoys, recombinase delivery for conditional gene deletion, conditional (recombinase-dependent) expression, includes those required for the gene editing components described herein. The non-protein coding gene may also encode a tRNA, rRNA, tmRNA, piRNA, double stranded RNA, snRNA, snoRNA, and/or long non-coding RNA (lncRNA). In some cases, the non-protein coding gene can modulate the expression or the activity of a target gene or gene expression product. For example, the RNAs described herein may be used to inhibit gene expression in the brain, heart, or brain and heart. In some cases, inhibition of gene expression refers to an inhibition by at least about 20%, 30%, 40%, 50%, 60%, 70%, 80%, 85%, 90%, 95% and 100%. In some cases, the protein product of the targeted gene may be inhibited by at least about 20%, 30%, 40%, 50%, 60%, 70%, 80%, 85%, 90%, 95% and 100%. The gene can be either a wild type gene or a gene with at least one mutation. The targeted protein may be either a wild type protein or a protein with at least one mutation.

[0071] A therapeutic nucleic acid can modulate the expression or activity of a gene or gene expression product expressed from the gene that is implicated in a disease or disorder of the brain, heart, or brain and heart. For example, the therapeutic nucleic acid, in some cases is a gene or a

modified version of the gene described herein. In some instances, the gene or gene expression product is inhibited. In some instances, the gene or gene expression product is enhanced.

[0072] In another example, the therapeutic nucleic acid comprises an effector gene expression product such as a gene editing component specific to target a gene therein. Non-limited examples of genes include target gene or gene expression product selected from ATP1A2, CACNAIA, SETD5, SHANK3, NF2, DNMT1, TCF4, RAI1, PEX1, ARSA, EIF2B5, EIF2B1, EIF2B2, NPC1, ADAR, MFSD8, STXBP1, PRICKLE2, PRRT2, IDUA, STX1B, Sarcoglycan Alpha (SGCA), glutamic acid decarboxylase 65 (GAD65), glutamic acid decarboxylase 67 (GAD67), CLN2, Nerve Growth Factor (NGF), glial cell derived neurotrophic factor (GDNF), Survival Of Motor Neuron 1, STXBP1, Telomeric (SMN1), Factor X (FIX), Retinoid Isomerohydrolase (RPE65), sarco/endoplasmic reticulum Ca²⁺-ATPase (SERCA2a), Glucocerebrosidase (GCase), galactocerebrosidase (GALC), CDKL5, Frataxin (FXN), Huntington (HTT), methyl-CpG binding protein 2 (MECP2), a peroxisomal biogenesis factor (PEX), progranulin (GRN), an anti-tubulin agent, copper-zinc superoxide dismutase (SOD1), iduronate 2 sulfatase (hIDS), Glucosylceramidase Beta (GBA), fragile X mental retardation 1 (FMR1), NPC Intracellular Cholesterol Transporter 1 (NPC1), SCN1A, C9orf72, NPS3 and a NLRP3 inflammasome. In some embodiments, the peroxisomal biogenesis factor (PEX) is selected from PEX1, PEX2, PEX3, PEX4, PEX5, PEX6, PEX7, PEX10, PEX11B, PEX12, PEX13, PEX14, PEX16, PEX19, and PEX26. In some instances, the gene or gene expression product is inhibited. In some instances, the gene or gene expression product is enhanced.

AAV Vectors

[0073] Aspects disclosed herein comprise plasmid vectors comprising a nucleic acid sequence encoding the AAV capsids and AAV capsid proteins described herein. AAV vectors described herein are useful for the assembly of a rAAV and viral packaging of a heterologous nucleic acid. In addition, an AAV vector may encode a transgene comprising the heterologous nucleic acid.

[0074] An AAV vector can comprise a transgene, which in some cases encodes a heterologous gene expression product (e.g., therapeutic gene expression product, recombinant capsid protein, and the like). The transgene is in cis with two inverted terminal repeats (ITRs) flanking the transgene. The transgene may comprise a therapeutic nucleic acid encoding a therapeutic gene expression product. Due to the limited packaging capacity of the rAAV (~5 KB), in some cases, a longer transgene may be split between two AAV vectors, the first with 3' splice donor and the second with a 5' splice acceptor. Upon co-infection of a cell, concatemers form, which are spliced together to express a full-length transgene.

[0075] A transgene is generally inserted so that its expression is driven by the endogenous promoter at the integration site, namely the promoter that drives expression of the endogenous gene into which a transgene is inserted. In some instances, a transgene comprises a promoter and/or enhancer, for example a constitutive promoter or an inducible or tissue/cell specific promoter. As a non-limiting example, the promoter may be CMV promoter, a CMV-β-Actin-intron-β-Globin hybrid promoter (CAG), CBA promoter, FRDA or FXN promoter, UBC promoter, GUSB

promoter, NSE promoter, Synapsin promoter, MeCP2 promoter, GFAP promoter, H1 promoter, U6 promoter, NFL promoter, NFH promoter, SCN8A promoter, or PGK promoter. As a non-limiting example, promoters can be tissue-specific expression elements include, but are not limited to, human elongation factor 1α-subunit (EF1α), immediate-early cytomegalovirus (CMV), chicken β-actin (CBA) and its derivative CAG, the β glucuronidase (GUSB), and ubiquitin C (UBC). The transgene may include a tissue-specific expression elements for neurons such as, but not limited to, neuron-specific enolase (NSE), platelet-derived growth factor (PDGF), platelet-derived growth factor B-chain (PDGF-β), the synapsin (Syn), the methyl-CpG binding protein 2 (MeCP2), Ca²⁺/calmodulin-dependent protein kinase II (CaMKII), metabotropic glutamate receptor 2 (mGluR2), NFL, NFH, np32, PPE, Enk and EAAT2 promoters. The transgene may comprise a tissue-specific expression element for astrocytes such as, but not limited to, the glial fibrillary acidic protein (GFAP) and EAAT2 promoters. The transgene may comprise tissue-specific expression elements for oligodendrocytes such as, but not limited to, the myelin basic protein (MBP) promoter.

[0076] In some embodiments, the promoter is less than 1 kb. The promoter may have a length of 200, 210, 220, 230, 240, 250, 260, 270, 280, 290, 300, 310, 320, 330, 340, 350, 360, 370, 380, 390, 400, 410, 420, 430, 440, 450, 460, 470, 480, 490, 500, 510, 520, 530, 540, 550, 560, 570, 580, 590, 600, 610, 620, 630, 640, 650, 660, 670, 680, 690, 700, 710, 720, 730, 740, 750, 760, 770, 780, 790, 800 or more than 800. The promoter may have a length between 200-300, 200-400, 200-500, 200-600, 200-700, 200-800, 300-400, 300-500, 300-600, 300-700, 300-800, 400-500, 400-600, 400-700, 400-800, 500-600, 500-700, 500-800, 600-700, 600-800 or 700-800. The promoter may provide expression of the therapeutic gene expression product for a period of time in targeted tissues such as, but not limited to, the brain, heart, or brain and heart. Expression of the therapeutic gene expression product may be for a period of 1 hour, 2 hours, 3 hours, 4 hours, 5 hours, 6 hours, 7 hours, 8 hours, 9 hours, 10 hours, 11 hours, 12 hours, 13 hours, 14 hours, 15 hours, 16 hours, 17 hours, 18 hours, 19 hours, 20 hours, 21 hours, 22 hours, 23 hours, 1 day, 2 days, 3 days, 4 days, 5 days, 6 days, 1 week, 8 days, 9 days, 10 days, 11 days, 12 days, 13 days, 2 weeks, 15 days, 16 days, 17 days, 18 days, 19 days, 20 days, 3 weeks, 22 days, 23 days, 24 days, 25 days, 26 days, 27 days, 28 days, 29 days, 30 days, 31 days, 1 month, 2 months, 3 months, 4 months, 5 months, 6 months, 7 months, 8 months, 9 months, 10 months, 11 months, 1 year, 13 months, 14 months, 15 months, 16 months, 17 months, 18 months, 19 months, 20 months, 21 months, 22 months, 23 months, 2 years, 3 years, 4 years, 5 years, 6 years, 7 years, 8 years, 9 years, 10 years, 11 years, 12 years, 13 years, 14 years, 15 years, 16 years, 17 years, 18 years, 19 years, 20 years, 21 years, 22 years, 23 years, 24 years, 25 years, 26 years, 27 years, 28 years, 29 years, 30 years, 31 years, 32 years, 33 years, 34 years, 35 years, 36 years, 37 years, 38 years, 39 years, 40 years, 41 years, 42 years, 43 years, 44 years, 45 years, 46 years, 47 years, 48 years, 49 years, 50 years, 55 years, 60 years, 65 years, or more than 65 years. Expression of the payload may be for 1-5 hours, 1-12 hours, 1-2 days, 1-5 days, 1-2 weeks, 1-3 weeks, 1-4 weeks, 1-2 months, 1-4 months, 1-6 months, 2-6 months, 3-6 months, 3-9 months, 4-8 months, 6-12 months, 1-2 years, 1-5 years, 2-5 years, 3-6 years, 3-8 years, 4-8 years or 5-10 years or

10-15 years, or 15-20 years, or 20-25 years, or 25-30 years, or 30-35 years, or 35-40 years, or 40-45 years, or 45-50 years, or 50-55 years, or 55-60 years, or 60-65 years.

[0077] An AAV vector can comprise a genome of a helper virus. Helper virus proteins are required for the assembly of a recombinant AAV (rAAV), and packaging of a transgene containing a heterologous nucleic acid into the rAAV. The helper virus genes are adenovirus genes E4, E2a and VA, that when expressed in the cell, assist with AAV replication. In some embodiments, an AAV vector comprises E2. In some embodiments, an AAV vector comprises E4. In some embodiments, an AAV vector comprises VA. In some instances, the AAV vector comprises one of helper virus proteins, or any combination.

[0078] The target gene or gene expression product for use in a transgene can be selected from ATP1A2, CACNAIA, SETD5, SHANK3, NF2, DNMT1, TCF4, RAI1, PEX1, ARSA, EIF2B5, EIF2B1, EIF2B2, NPC1, ADAR, MFSD8, STXBP1, PRICKLE2, PRRT2, IDUA, STX1B, Sarcoglycan Alpha (SGCA), glutamic acid decarboxylase 65 (GAD65), glutamic acid decarboxylase 67 (GAD67), CLN2, Nerve Growth Factor (NGF), glial cell derived neurotrophic factor (GDNF), Survival Of Motor Neuron 1, STXBP1, Telomeric (SMN1), Factor X (FIX), Retinoid Isomerohydrolase (RPE65), sarco/endoplasmic reticulum Ca²⁺-ATPase (SERCA2a), Glucocerebrosidase (GCase), galactocerebrosidase (GALC), CDKL5, Frataxin (FXN), Huntingtin (HTT), methyl-CpG binding protein 2 (MECP2), a peroxisomal biogenesis factor (PEX), progranulin (GRN), an anti-tubulin agent, copper-zinc superoxide dismutase (SOD1), iduronate 2 sulfatase (hIDS), Glucosylceramidase Beta (GBA), fragile X mental retardation 1 (FMR1), NPC Intracellular Cholesterol Transporter 1 (NPC1), SCN1A, C9orf72, NPS3 and a NLRP3 inflammasome. In some embodiments, the peroxisomal biogenesis factor (PEX) is selected from PEX1, PEX2, PEX3, PEX4, PEX5, PEX6, PEX7, PEX10, PEX11B, PEX12, PEX13, PEX14, PEX16, PEX19, and PEX26.

[0079] An AAV vector can comprise a viral genome comprising a nucleic acid encoding the recombinant AAV (rAAV) capsid protein described herein. The viral genome can comprise a Replication (Rep) gene encoding a Rep protein, and Capsid (Cap) gene encoding an AAP protein in the first open reading frame (ORF1) or a Cap protein in the second open reading frame (ORF2). The Rep protein is selected from Rep78, Rep68, Rep52, and Rep40. In some instances, the Cap gene is modified encoding a modified AAV capsid protein described herein. A wild-type Cap gene encodes three proteins, VP1, VP2, and VP3. In some cases, VP1 is modified. In some cases, VP2 is modified. In some cases, VP3 is modified. In some cases, all three VP1-VP3 are modified. The AAV vector can comprise nucleic acids encoding wild-type Rep78, Rep68, Rep52, Rep40 and AAP proteins.

Methods of Producing rAAVs

[0080] Disclosed herein are methods of producing the AAV capsids comprising the AAV capsid proteins and viral vector encoding a therapeutic nucleic acid. The AAV capsid proteins are produced by introducing into a cell (e.g., immortalized stem cell) a first vector containing a transgene cassette flanked by inverted terminal repeat (ITR) sequences from a parental AAV virus (the transgene cassette has a promoter sequence that drives transcription of a heterologous nucleic acid in the nucleus of the target cell), a second

vector encoding the AAV genome with a AAV capsid protein (encoding the AAV Rep gene as well as the modified Cap gene for the variant being produced), and a third vector encoding helper virus proteins, required for assembly of the AAV capsid structure and packaging of the transgene in the modified AAV capsid structure. The assembled AAV capsid can be isolated and purified from the cell using suitable methods known in the art.

[0081] The transgenes contained in a recombinant AAV (rAAV) vector and encapsidated by the AAV capsid proteins of the present disclosure are also provided herein. The transgenes disclosed herein are delivered to a subject for a variety of purposes, such as to treat a disease or condition in the subject. The transgene can be gene editing components that modulate the activity or expression of a target gene or gene expression product. Alternatively, the transgene is a gene encoding a therapeutic gene expression product that is effective to modulate the activity or expression of itself, or another target gene or gene expression product.

[0082] Aspects disclosed herein provide methods of manufacturing rAAV virus or virus particles comprising: (a) introducing into a cell a nucleic acid comprising: (i) first vector containing a transgene cassette flanked by inverted terminal repeat (ITR) sequences from a parental AAV virus (the transgene cassette has a promoter sequence that drives transcription of a heterologous nucleic acid in the nucleus of the target cell); (ii) a second vector encoding the AAV genome with a AAV capsid protein of the present invention; and (iii) a vector encoding helper virus proteins, required for assembly of the AAV capsid structure and packaging of the transgene in the modified AAV capsid structure; (b) expressing in the cell the AAV capsid protein described herein; (c) assembling an AAV particle comprising the AAV capsid proteins disclosed herein; and (d) packaging the AAV particle. In some instances, the cell is mammalian. In some instances, the cell is immortalized. In some instances, the immortalized cell is an embryonic stem cell. In some instances, the embryonic stem cell is a human embryonic stem cell. In some instances, the human embryonic stem cell is a human embryonic kidney 293 (HEK-293) cell. In some instances, the Cap gene is derived from the deoxyribose nucleic acid (DNA) provided in SEQ ID NO: 6. In some instances, the 5' ITR and the 3' ITR are derived from an AAV2 serotype. In some instances, the 5' ITR and the 3' ITR are derived from an AAV5 serotype. In some instances, the 5' ITR and the 3' ITR are derived from an AAV9 serotype. In some instances, the first nucleic acid sequence and the second nucleic acid sequence are in trans. In some instances, the first nucleic acid sequence and the second nucleic acid sequence are in cis. In some instances, the first nucleic acid sequence, the second nucleic acid sequence and the third nucleic acid sequence, are in trans.

[0083] The Cap gene disclosed here comprises any one of SEQ ID NOS: 57-73 from Table 4, which are DNA sequences encoding the modified AAV capsid protein portions of the present disclosure.

[0084] In some instances, the methods comprise packing the first nucleic acid sequence encoding the therapeutic gene expression product such that it becomes encapsidated by the modified AAV capsid protein. In some embodiments, the rAAV particles are isolated, concentrated, and purified using suitable viral purification methods, such as those described herein.

[0085] In some cases, rAAVs of the present disclosure are generated using the methods described in Challis, R. C. et al. Nat. Protoc. 14, 379 (2019). Briefly, triple transfection of HEK293T cells (ATCC) using polyethylenimine (PEI) is performed, viruses are collected after 120 hours from both cell lysates and media and purified over iodixanol. In a non-limiting example, the rAAVs are generated by triple transfection of precursor cells (e.g., HEK293T) cells using a standard transfection protocol (e.g., PEI). Viral particles are harvested from the media after a period of time (e.g., 72 h post transfection) and from the cells and media at a later point in time (e.g., 120 h post transfection). Virus present in the media is concentrated by precipitation with 8% polyethylene glycol (PEG) and 500 mM sodium chloride and the precipitated virus is added to the lysates prepared from the collected cells. The viruses are purified over iodixanol (Optiprep, Sigma) step gradients (15%, 25%, 40% and 60%). Viruses are concentrated and formulated in PBS. Virus titers are determined by measuring the number of DNaseI-resistant vector genome copies (VGs) using qPCR and the linearized genome plasmid as a control.

[0086] The cell can be selected from a human, a primate, a murine, a feline, a canine, a porcine, an ovine, a bovine, an equine, an epine, a caprine and a lupine host cell. In some instances, the cell is a progenitor or precursor cell, such as a stem cell. In some instances, the stem cell is a mesenchymal cell, embryonic stem cell, induced pluripotent stem cell (iPSC), fibroblast or other tissue specific stem cell. The cell can be immortalized. In some cases, the immortalized cell is a HEK293cell. In some instances, the cell is a differentiated cell. Based on the disclosure provided, it is expected that this system can be used in conjunction with any transgenic line expressing a recombinase in the target cell type of interest to develop AAV capsids that more efficiently transduce that target cell population.

Methods of Treatment

[0087] Disclosed herein are methods of treating a disease or condition, or a symptom of the disease or condition, in a subject, comprising administrating of therapeutically effective amount of one or more compositions (e.g., rAAV particle, AAV vector, pharmaceutical composition) disclosed herein to the subject. In some embodiments, the composition is a rAAV capsid protein described herein. In some embodiments, the composition is an isolated and purified rAAV capsid protein described herein. In some embodiments, the rAAV particle encapsidates an AAV vector comprising a transgene (e.g., therapeutic nucleic acid). In some embodiments, the composition is a rAAV capsid protein described herein conjugated with a therapeutic agent disclosed herein. In some embodiments, the composition is a pharmaceutical composition comprising the rAAV particle and a pharmaceutically acceptable carrier. In some embodiments, the one or more compositions are administered to the subject alone (e.g., stand-alone therapy). In some embodiments, the composition is a first-line therapy for the disease or condition. In some embodiments, the composition is a second-line, third-line, or fourth-line therapy, for the disease or condition.

[0088] Recombinant adeno-associated virus (rAAV) mediated gene delivery leverages the AAV mechanism of viral transduction for nuclear expression of an episomal heterologous nucleic acid (e.g., a transgene, therapeutic nucleic acid). Upon delivery to a host in vivo environment, a rAAV

will (1) bind or attach to cellular surface receptors on the target cell, (2) endocytose, (3) traffic to the nucleus, (4) uncoat the virus to release the encapsidated heterologous nucleic acid, (5) convert of the heterologous nucleic acid from single-stranded to double-stranded DNA as a template for transcription in the nucleus, and (6) transcribe of the episomal heterologous nucleic acid in the nucleus of the host cell ("transduction"). rAAVs engineered to have an increased transduction enrichment (transcription of the episomal heterologous nucleic acid in the host cell) are desirable for gene therapy applications.

[0089] Aspects disclosed herein provide methods of treating a disease or condition in a subject, the method comprising administering to the subject a therapeutically effective amount of the rAAV of the present disclosure, or the pharmaceutical formulation of the present disclosure, wherein the gene product is a therapeutic gene product. In some embodiments, the administering is by intracranial, intraventricular, intracerebroventricular, intravenous, intraarterial, intranasal, intrathecal, intracisterna magna, or subcutaneous.

[0090] Provided here, are methods of treating a disease or a condition associated with an aberrant expression or activity of a target gene or gene expression product thereof, the method comprising modulating the expression or the activity of a target gene or gene expression product in a subject by administering a rAAV encapsidating a heterologous nucleic acid of the present disclosure. In some instances, the expression or the activity of the target gene or gene expression product is decreased, relative to that in a normal (non-diseased) individual; and administering the rAAV to the subject is sufficient to increase the expression of the activity of the target gene or gene expression product. In some instances, the expression or the activity of the gene or gene expression product is increased, relative to that in a normal individual; and administering the rAAV to the subject is sufficient to decrease the expression or the activity of the target gene or gene expression product. In a non-limiting example, a subject diagnosed with Alzheimer's disease, which is caused, in some cases, by a gain-of-function of a Presenilin 1 and/or Presenilin 2 (encoded by the gene PSEN1 and PSEN2, respectively) is administered a rAAV disclosed herein encapsidating a therapeutic nucleic acid that is a silencing RNA (siRNA), or other RNAi with a loss-of-function effect on PSEN1 mRNA.

[0091] Also provided are methods of preventing a disease or condition disclosed herein in a subject comprising administering to the subject a therapeutically effective amount of an rAAV vector comprising a nucleic acid sequence encoding a therapeutic gene expression product described herein. The rAAV vector may be encapsidated in the modified capsid protein or rAAV viral particle described herein. In some instances, the therapeutic gene expression product is effective to modulate the activity or expression of a target gene or gene expression product.

[0092] Disclosed herein are methods of treating a disease or condition in a subject by administering a composition comprising a rAAV disclosed herein. An advantage of the rAAVs disclosed herein, is that the rAAV may be used to treat virtually any disease or condition that would benefit from a transgene therapy, including but not limited to spinal muscular atrophy (SMA), amyotrophic lateral sclerosis (ALS), Parkinson's disease, Pompe disease, mucopolysaccharidosis type II, fragile X syndrome, STXBP1 encephal-

lopathy, Krabbe disease, Huntington's disease, Alzheimer's disease, Battens disease, lysosomal storage disorders, glioblastoma multiforme, Rett syndrome, Leber's congenital amaurosis, Late infantile neuronal ceroid lipofuscinosis (LINCL), chronic pain, stroke, spinal cord injury, traumatic brain injury and lysosomal storage disorders.

[0093] In some cases, the disease or condition is localized to a particular in vivo environment in the subject, e.g., the brain, heart, or brain and heart. The compositions of the present disclosure are particularly useful for the treatment of the diseases or conditions described herein because they specifically or more efficiently target the in vivo environment and deliver a therapeutic nucleic acid engineered to modulate the activity or the expression of a target gene expression product involved with the pathogenesis or pathology of the disease or condition.

[0094] Provided herein are methods of treating a disease or a condition, or a symptom of the disease or condition, in a subject, comprising: (a) diagnosing a subject with a disease or a condition affecting a target in vivo environment; and (b) treating the disease or the condition by administering to the subject a therapeutically effective amount of a composition disclosed herein (e.g., rAAV particle, AAV vector, pharmaceutical composition), wherein the composition is engineered with an increased specificity for the target in vivo environment.

[0095] Disclosed herein are methods of treating a disease or a condition, or a symptom of the disease or the condition, afflicting a target in a subject comprising: (a) administering to the subject a composition (e.g., rAAV particle, AAV vector, pharmaceutical composition); and (b) expressing the therapeutic nucleic acid into a target in vivo environment in the subject with an increased transduction enrichment.

[0096] In some embodiments, methods of treating a disease or condition affecting the brain, heart, or brain and heart comprise administering a rAAV particle to a brain, heart, or brain and heart, respectively, in a subject, the rAAV particle comprising an rAAV capsid protein comprising an insertion of about, five, six, or seven amino acids of an amino acid sequence provided in Tables 1-3 at an amino acid position 588-589 in a parental AAV capsid protein. In some embodiments, methods of treating a disease or condition affecting the brain, heart, or brain and heart comprise administering a rAAV particle to a brain, heart, or brain and heart in a subject, respectively, the rAAV particle comprising an rAAV capsid protein comprising an insertion of about, five, six, or seven amino acids of an amino acid sequence as well as one or more substitution at amino acid found at amino acid positions 587-590 [AQAAQ] such as provided in Tables 1-3. In some embodiments, the parental AAV capsid protein is AAV9 capsid protein (for e.g., provided in SEQ ID NO: 1.

[0097] Also provided are methods of modulating a target gene expression product, the methods comprising administering to a subject in need thereof a composition (e.g., rAAV particle, AAV vector, pharmaceutical composition) disclosed herein. For example, methods provided herein comprise administering to a subject a rAAV with a rAAV capsid protein encapsidating a viral vector comprising a heterologous nucleic acid that modulates the expression or the activity of the target gene expression product.

[0098] The term "normal individual" refers to an individual that is not afflicted with the disease or the condition characterized by the variation in expression or activity of the gene or gene expression product thereof.

[0099] In some embodiments, the disease or condition of the brain selected from Absence of the Septum Pellucidum, Acid Lipase Disease, Acid Maltase Deficiency, Acquired Epileptiform Aphasia, Acute Disseminated Encephalomyelitis, Attention Deficit-Hyperactivity Disorder (ADHD), Adie's Pupil, Adie's Syndrome, Adrenoleukodystrophy, Agenesis of the Corpus Callosum, Agnosia, Aicardi Syndrome, Aicardi-Goutieres Syndrome Disorder, AIDS-Neurological Complications, Alexander Disease, Alpers' Disease, Alternating Hemiplegia, Alzheimer's Disease, Amyotrophic Lateral Sclerosis (ALS), Anencephaly, Aneurysm, Angelman Syndrome, Angiomatosis, Anoxia, Antiphospholipid Syndrome, Aphasia, Apraxia, Arachnoid Cysts, Arachnoiditis, Arnold-Chiari Malformation, Arteriovenous Malformation, Asperger Syndrome, Ataxia, Ataxia Telangiectasia, Ataxias and Cerebellar or Spinocerebellar Degeneration, Atrial Fibrillation and Stroke, Attention Deficit-Hyperactivity Disorder, Autism Spectrum Disorder, Autonomic Dysfunction, Back Pain, Barth Syndrome, Batten Disease, Becker's Myotonia, Behcet's Disease, Bell's Palsy, Benign Essential Blepharospasm, Benign Focal Amyotrophy, Benign Intracranial Hypertension, Bernhardt-Roth Syndrome, Binswanger's Disease, Blepharospasm, Bloch-Sulzberger Syndrome, Brachial Plexus Birth Injuries, Brachial Plexus Injuries, Bradbury-Eggleston Syndrome, Brain and Spinal Tumors, Brain Aneurysm, Brain Injury, Brown-Sequard Syndrome, Bulbospinal Muscular Atrophy, Cerebral Autosomal Dominant Arteriopathy with Subcortical Infarcts and Leukoencephalopathy (CADASIL), Canavan Disease, Carpal Tunnel Syndrome, Causalgia, Cavernomas, Cavernous Angioma, Cavernous Malformation, Central Cervical Cord Syndrome, Central Cord Syndrome, Central Pain Syndrome, Central Pontine Myelinolysis, Cephalic Disorders, Ceramidase Deficiency, Cerebellar Degeneration, Cerebellar Hypoplasia, Cerebral Aneurysms, Cerebral Arteriosclerosis, Cerebral Atrophy, Cerebral Beriberi, Cerebral Cavemous Malformation, Cerebral Gigantism, Cerebral Hypoxia, Cerebral Palsy, Cerebro-Oculo-Facio-Skeletal Syndrome (COFS), Charcot-Marie-Tooth Disease, Charcot-Marie-Tooth syndrome, classical rhizomelic chondrodyplasia punctata (RCDP), Chiari Malformation, Cholesterol Ester Storage Disease, Chorea, Choreoacanthocytosis, Chronic Inflammatory Demyelinating Polyneuropathy (CIDP), Chronic Orthostatic Intolerance, Chronic Pain, Cockayne Syndrome, Cockayne Syndrome Type II, Coffin Lowry Syndrome, Colpocephaly, Coma, Complex Regional Pain Syndrome, Congenital Facial Diplegia, Congenital Myasthenia, Congenital Myopathy, Congenital Vascular Cavernous Malformations, Corticobasal Degeneration, Cranial Arteritis, Craniosynostosis, Cree encephalitis, Creutzfeldt-Jakob Disease, Cumulative Trauma Disorders, Cushing's Syndrome, Cytomegalic Inclusion Body Disease, Cytomegalovirus Infection, Dancing Eyes-Dancing Feet Syndrome, Dandy-Walker Syndrome, Dawson Disease, Deafness, De Morsier's Syndrome, Dejerine-Klumpke Palsy, Dementia, Dementia-Multi-Infarct, Dementia-Semantic, Dementia-Subcortical, Dementia With Lewy Bodies, Dentate Cerebellar Ataxia, Dentatorubral Atrophy, Dermatomyositis, Developmental Dyspraxia, Devic's Syndrome, Diabetic Neuropathy, Diffuse Sclerosis, Dravet Syndrome, Duchenne muscular dystrophy, Dysautonomia, Dysgraphia, Dyslexia, Dysphagia, Dyspraxia, Dyssynergia Cerebellaris Myoclonica, Dyssynergia Cerebellaris Progressiva, Dystonias, Early Infantile Epileptic

Encephalopathy, Empty Sella Syndrome, Encephalitis, Encephalitis Lethargica, Encephaloceles, Encephalopathy, Encephalopathy (familial infantile), Encephalotrigeminal Angiomatosis, Epilepsy, Epileptic Hemiplegia, Erb's Palsy, Erb-Duchenne and Dejerine-Klumpke Palsies, Essential Tremor, Extrapontine Myelinolysis, Fabry Disease, Fahr's Syndrome, Fainting, Familial Dysautonomia, Familial Hemangioma, Familial Idiopathic Basal Ganglia Calcification, Familial Periodic Paralyses, Familial Spastic Paralysis, Farber's Disease, Febrile Seizures, Fibromuscular Dysplasia, Fisher Syndrome, Floppy Infant Syndrome, Foot Drop, Fragile X syndrome, Friedreich's Ataxia, Frontotemporal Dementia (FTD), Gaucher Disease, Generalized Gangliosidosis, Gerstmann's Syndrome, Gerstmann-Straussler-Scheinker Disease, Giant Axonal Neuropathy, Giant Cell Arteritis, Giant Cell Inclusion Disease, glioblastoma, Globoid Cell Leukodystrophy, Glossopharyngeal Neuralgia, Glycogen Storage Disease, Guillain-Barre Syndrome, Hallervorden-Spatz Disease, Head Injury, Headache, Hemicrania Continua, Hemifacial Spasm, Hemiplegia Alterans, Hereditary Neuropathies, Hereditary Spastic Paraparesis, Heredopathia Atactica Polyneuritiformis, Herpes Zoster, Herpes Zoster Oticus, Hirayama Syndrome, Holmes-Adie syndrome, Holoprosencephaly, HTLV-1 Associated Myelopathy, Hughes Syndrome, Huntington's Disease, Hydranencephaly, Hydrocephalus, Hydrocephalus-Normal Pressure, Hydromyelia, Hypercortisolism, Hypersomnia, Hypertonia, Hypotonia, Hypoxia, Immune-Mediated Encephalomyelitis, Inclusion Body Myositis, Incontinentia Pigmenti, Infantile Hypotonia, Infantile Neuroaxonal Dystrophy, Infantile Phytanic Acid Storage Disease, Infantile Refsum Disease (IRD), Infantile Spasms, Inflammatory Myopathies, Iniencephaly, Intestinal Lipodystrophy, Intracranial Cysts, Intracranial Hypertension, Isaacs' Syndrome, Joubert Syndrome, Kearns-Sayre Syndrome, Kennedy's Disease, Kinsbourne syndrome, Kleine-Levin Syndrome, Klippel-Feil Syndrome, Klippel-Trenaunay Syndrome (KTS), Kliiver-Bucy Syndrome, Korsakoff's Amnesia Syndrome, Krabbe Disease, Kugelberg-Welander Disease, Kuru, Lambert-Eaton Myasthenic Syndrome, Landau-Kleffner Syndrome, Lateral Femoral Cutaneous Nerve Entrapment, Lateral Medullary Syndrome, Learning Disabilities, Leigh's Disease, Lennox-Gastaut Syndrome, Lesch-Nyhan Syndrome, Leukodystrophy, Levine-Critchley Syndrome, Lewy Body Dementia, Lipid Storage Diseases, Lipoid Proteinosis, Lissencephaly, Locked-In Syndrome, Lou Gehrig's Disease, Lupus-Neurological Sequelae, Lyme Disease-Neurological Complications, Machado-Joseph Disease, Macronecephaly, Maple syrup urine disease, Megalencephaly, Melkersson-Rosenthal Syndrome, Meningitis, Meningitis and Encephalitis, Menkes Disease, Menkes syndrome, Meralgia Paresthetica, Metachromatic Leukodystrophy, Microcephaly, Migraine, Miller Fisher Syndrome, Mini Stroke, Mitochondrial Myopathy, Moebius Syndrome, Monomelic Amyotrophy, Motor Neuron Diseases, Moyamoya Disease, Mucolipidoses, Mucopolysaccharidosis, Mucopolysaccharidosis II, Multi-Infarct Dementia, Multifocal Motor Neuropathy, Multiple Sclerosis, Multiple System Atrophy, Multiple System Atrophy with Orthostatic Hypotension, Muscular Dystrophy, Myasthenia-Congenital, Myasthenia Gravis, Myelinoclastic Diffuse Sclerosis, Myoclonic Encephalopathy of Infants, Myoclonus, Myopathy, Myopathy-Congenital, Myopathy-Thyrotoxic, Myotonia, Myotonia Congenita, Myotonic dystrophy, Narcolepsy, Neuro-

canthocytosis, Neurodegeneration with Brain Iron Accumulation, Neurofibromatosis, Neuroleptic Malignant Syndrome, Neurological Complications of AIDS, Neurological Complications of Lyme Disease, Neurological Consequences of Cytomegalovirus Infection, Neurological Manifestations of Pompe Disease, Neurological Sequelae Of Lupus, Neuromyelitis Optica, Neuromyotonia, Neuronal Ceroid Lipofuscinoses, Neuronal Migration Disorders, Neuropathy-Hereditary, Neurosarcoïdosis, Neurosyphilis, NeuROTOXICITY, Nevus Cavernosus, Niemann-Pick Disease, O'Sullivan-McLeod Syndrome, Occipital Neuralgia, Ohtahara Syndrome, Olivopontocerebellar Atrophy, Opsoclonus Myoclonus, Orthostatic Hypotension, Overuse Syndrome, Pain-Chronic, Pantothenate Kinase-Associated Neurodegeneration, Paraneoplastic Syndromes, Paresthesia, Parkinson's Disease, Paroxysmal Choreoathetosis, Paroxysmal Hemicrania, Parry-Romberg, Pelizaeus-Merzbacher Disease, Pena Shokeir II Syndrome, Perineural Cysts, Periodic Paralyses, Peripheral Neuropathy, Periventricular Leukomalacia, Persistent Vegetative State, Pervasive Developmental Disorders, Phenylketonuria, Phytanic Acid Storage Disease, Pick's Disease, Pinched Nerve, Piriformis Syndrome, Pituitary Tumors, Polymyositis, Pompe Disease, Porencephaly, Post-Polio Syndrome, Postherpetic Neuralgia, Postinfectious Encephalomyelitis, Postural Hypotension, Postural Orthostatic Tachycardia Syndrome, Postural Tachycardia Syndrome, Prader-Willi syndrome, Primary Dentatum Atrophy, Primary Lateral Sclerosis, Primary Progressive Aphasia, Prion Diseases, Progressive Hemifacial Atrophy, Progressive Locomotor Ataxia, Progressive Multifocal Leukoencephalopathy, Progressive Sclerosing Poliodystrophy, Progressive Supranuclear Palsy, Prosopagnosia, Pseudo-Torch syndrome, Pseudotoxoplasmosis syndrome, Pseudotumor Cerebri, Psychogenic Movement, Ramsay Hunt Syndrome I, Ramsay Hunt Syndrome II, Rasmussen's Encephalitis, Reflex Sympathetic Dystrophy Syndrome, Refsum Disease, Refsum Disease-Infantile, Repetitive Motion Disorders, Repetitive Stress Injuries, Restless Legs Syndrome, Retrovirus-Associated Myelopathy, Rett Syndrome, Reye's Syndrome, Rheumatic Encephalitis, Riley-Day Syndrome, Sacral Nerve Root Cysts, Saint Vitus Dance, Salivary Gland Disease, Sandhoff Disease, Schilder's Disease, Schizencephaly, Seitelberger Disease, Seizure Disorder, Semantic Dementia, Septo-Optic Dysplasia, Severe Myoclonic Epilepsy of Infancy (SMEI), Shaken Baby Syndrome, Shingles, Shy-Drager Syndrome, Sjogren's Syndrome, Sleep Apnea, Sleeping Sickness, Sotos Syndrome, Spasticity, Spina Bifida, Spinal Cord Infarction, Spinal Cord Injury, Spinal Cord Tumors, Spinal Muscular Atrophy, Spinocerebellar ataxia, Spinocerebellar Atrophy, Spinocerebellar Degeneration, Steele-Richardson-Olszewski Syndrome, Stiff-Person Syndrome, Striatonigral Degeneration, Stroke, Sturge-Weber Syndrome, STXBP1 encephalopathy, Subacute Sclerosing Panencephalitis, Subcortical Arteriosclerotic Encephalopathy, Short-lasting, Unilateral, Neuralgiform (SUNCT) Headache, Swallowing Disorders, Sydenham Chorea, Syncope, Syphilitic Spinal Sclerosis, Syringohydromyelia, Syringomyelia, Systemic Lupus Erythematosus, Tabes Dorsalis, Tangier disease, Tar-dive Dyskinesia, Tarlov Cysts, Tay-Sachs Disease, Temporal Arteritis, Tethered Spinal Cord Syndrome, Thomsen's Myotonia, Thoracic Outlet Syndrome, Thyrotoxic Myopathy, Tic Douloureux, Todd's Paralysis, Tourette Syndrome, Transient Ischemic Attack, Transmissible Spongiform Encephal-

lopathies, Transverse Myelitis, Traumatic Brain Injury, Tremor, Trigeminal Neuralgia, Tropical Spastic Paraparesis, Troyer Syndrome, Tuberous Sclerosis, Vascular Erectile Tumor, Vasculitis Syndromes of the Central Nervous Systems, Von Economo's Disease, Von Hippel-Lindau Disease (VHL), Von Hippel-Lindau syndrome, Von Recklinghausen's Disease, Wallenberg's Syndrome, Werding-Hoffmann Disease, Wernicke-Korsakoff Syndrome, West Syndrome, Whiplash, Whipple's Disease, Williams Syndrome, Wilson Disease, Wolman's Disease, X-Linked Spinal and Bulbar Muscular Atrophy and Zellweger syndrome.

[0100] In some embodiments, the pharmaceutical formulation comprises a therapeutic nucleic acid encoding a therapeutic gene expression product. In some instances, the therapeutic gene expression product is effective to modulate an activity or an expression of a target gene or gene expression product selected from ATP1A2, CACNA1A, SETD5, SHANK3, NF2, DNMT1, TCF4, RAI1, PEX1, ARSA, EIF2B5, EIF2B1, EIF2B2, NPC1, ADAR, MFSD8, STXBP1, PRICKLE2, PRRT2, IDUA, STX1B, Sarcoglycan Alpha (SGCA), glutamic acid decarboxylase 65 (GAD65), glutamic acid decarboxylase 67 (GAD67), CLN2, Nerve Growth Factor (NGF), glial cell derived neurotrophic factor (GDNF), Survival Of Motor Neuron 1, STXBP1, Telomeric (SMN1), Factor X (FIX), Retinoid Isomerohydrolase (RPE65), sarco/endoplasmic reticulum Ca²⁺-ATPase (SERCA2a), Glucocerebrosidase (GCase), galactocerebrosidase (GALC), CDKL5, Frataxin (FXN), Huntington (HTT), methyl-CpG binding protein 2 (MECP2), a peroxisomal biogenesis factor (PEX), programulin (GRN), an anti-tubulin agent, copper-zinc superoxide dismutase (SOD1), iduronate 2 sulfatase (IDS), Glucosylceramidase Beta (GBA), fragile X mental retardation 1 (FMR1), NPC Intracellular Cholesterol Transporter 1 (NPC1), SCN1A, C9orf72, NPS3 and a NLRP3 inflammasome. In some embodiments, the peroxisomal biogenesis factor (PEX) is selected from PEX1, PEX2, PEX3, PEX4, PEX5, PEX6, PEX7, PEX10, PEX11B, PEX12, PEX13, PEX14, PEX16, PEX19, and PEX26.

[0101] In some aspects, other examples of genes involved in neurologic or brain diseases or disorders include MAPT, IDUA, SNCA, ATXN2, Ube3a, GNS, HGSNAT, NAGLU, SGSH, CLN1, CLN3, CLN4, CLN5, CLN6, CLN7, CLN8, CTSD, ABCD1, HEXA, HEXB, ASM, ASPA, GLB1, AADC, MFN2, GNAO1, SYNGAP1, GRIN2A, GRIN2B, KCNQ2, EPM2A, NHLRC1, SLC6A1, SLC13A5, SURF1, GBE1, ATXN1, ATXN3, and ATXN7.

[0102] In some embodiments, the disease or condition of the heart includes any disease of the cardiopulmonary system, including, but not limited to heart failure, ischemia, arrhythmia, myocardial infarction, congestive heart failure, transplant rejection, abnormal heart contractility, non-ischaemic cardiomyopathy, mitral valve regurgitation, refractory myocardial ischaemia, non-ischaemic heart failure, aortic stenosis or regurgitation, abnormal Ca²⁺ metabolism, dysregulation of a heart-specific protein or a protein effective in modulating cardiac activity or physiology.

[0103] In some embodiments, genes involved in heart disease include those the express proteins involved in the regulation of calcium cycling in cardiomyocytes, such as a sarcoplasmic endoplasmic reticulum Ca²⁺-ATPase pump.

[0104] In some embodiments, cells of the heart or heart tissue comprise tissue or cells of any portion of the cardio-pulmonary system. In certain aspects, cells of the heart or

heart tissue comprises cardiac muscle cells/tissue, cells/tissue of the cardiac vasculature, and cells/tissue present in a cardiac valve. Cells of the heart may include cardiomyocytes, epithelial cells, endothelial cells, fibroblasts, cells of the conducting tissue, cardiac pacemaking cells, and neurons.

[0105] In some instances, the therapeutic gene expression product comprises gene editing components. In some instances, the gene editing components are selected from an artificial site-specific RNA endonuclease (ASRE), a zinc finger endonuclease (ZFN), a transcription factor like effector nuclease (TALEN), a clustered regularly interspaced short palindromic repeats (CRISPR)/Cas enzyme, and a CRISPR/Cas guide RNA.

[0106] In some instances, the expression of a gene or expression or activity of a gene expression product is inhibited by the administration of the composition to the subject. In some instances, the expression of a gene or the expression or the activity of a gene expression product is enhanced by the administration of the composition to the subject.

Formulations, Dosages, and Routes of Administration

[0107] Disclosed herein are methods comprising delivering a rAAV particle encapsidating a heterologous nucleic acid to the brain, heart, or brain and heart in a subject, the rAAV particle comprising (i) an increased transduction of the heterologous nucleic acid in the brain, heart, or brain and heart, wherein the rAAV particle has an rAAV capsid protein comprising an insertion of five, six, or seven amino acids of an amino acid sequence provided in Tables 1-3, at an amino acid position 588-589 in a parental AAV capsid protein as well as one or more substitution at amino acid found at amino acid positions 587-590 [AQAAQ] such as provided in Tables 1-3. In various embodiments, the rAAV capsid protein may comprise one or more substitutions at amino acid positions 452-458 alone or in combination with the modifications above.

[0108] In general, methods disclosed herein comprise administering a therapeutic rAAV composition by systemic administration. In some instances, methods comprise administering a therapeutic rAAV composition by intravenous ("i.v.") administration. One may administer therapeutic rAAV compositions by additional routes, such as subcutaneous injection, intramuscular injection, intradermal injection, transdermal injection, percutaneous administration, intranasal administration, intralymphatic injection, rectal administration, intragastric administration, intraocular administration, intracerebroventricular administration, intrathecally, intracisternal, or any other suitable parenteral administration. Routes, dosage, time points, and duration of administrating therapeutics may be adjusted. In some embodiments, administration of therapeutics is prior to, or after, onset of either, or both, acute and chronic symptoms of the disease or condition. Other routes of delivery to the brain, heart, or brain and heart include, but are not limited to intracranial administration, lateral cerebroventricular administration, and endovascular administration.

[0109] An effective dose and dosage of pharmaceutical compositions to prevent or treat the disease or condition disclosed herein is defined by an observed beneficial response related to the disease or condition, or symptom of the disease or condition. Beneficial response comprises preventing, alleviating, arresting, or curing the disease or

condition, or symptom of the disease or condition. In some embodiments, the beneficial response may be measured by detecting a measurable improvement in the presence, level, or activity, of biomarkers, transcriptomic risk profile, or intestinal microbiome in the subject. An "improvement," as used herein refers to shift in the presence, level, or activity towards a presence, level, or activity, observed in normal individuals (e.g. individuals who do not suffer from the disease or condition). In instances wherein the therapeutic rAAV composition is not therapeutically effective or is not providing a sufficient alleviation of the disease or condition, or symptom of the disease or condition, then the dosage amount and/or route of administration may be changed, or an additional agent may be administered to the subject, along with the therapeutic rAAV composition. In some embodiments, as a patient is started on a regimen of a therapeutic rAAV composition, the patient is also weaned off (e.g., step-wise decrease in dose) a second treatment regimen.

[0110] In some cases, a dose of the pharmaceutical composition may comprise a concentration of infectious particles of at least or about 10^7 , 10^8 , 10^9 , 10^{10} , 10^{11} , 10^{12} , 10^{13} , 10^{14} , 10^{15} , 10^{16} , or 10^{17} . In some cases, the concentration of infectious particles is 2×10^7 , 2×10^8 , 2×10^9 , 2×10^{10} , 2×10^{11} , 2×10^{12} , 2×10^{13} , 2×10^{14} , 2×10^{15} , 2×10^{16} , or 2×10^{17} . In some cases, the concentration of the infectious particles is 3×10^7 , 3×10^8 , 3×10^9 , 3×10^{10} , 3×10^{11} , 3×10^{12} , 3×10^{13} , 3×10^{14} , 3×10^{15} , 3×10^{16} , or 3×10^{17} . In some cases, the concentration of the infectious particles is 4×10^7 , 4×10^8 , 4×10^9 , 4×10^{10} , 4×10^{11} , 4×10^{12} , 4×10^{13} , 4×10^{14} , 4×10^{15} , 4×10^{16} , or 4×10^{17} . In some cases, the concentration of the infectious particles is 5×10^7 , 5×10^8 , 5×10^9 , 5×10^{10} , 5×10^{11} , 5×10^{12} , 5×10^{13} , 5×10^{14} , 5×10^{15} , 5×10^{16} , or 5×10^{17} . In some cases, the concentration of the infectious particles is 6×10^7 , 6×10^8 , 6×10^9 , 6×10^{10} , 6×10^{11} , 6×10^{12} , 6×10^{13} , 6×10^{14} , 6×10^{15} , 6×10^{16} , or 6×10^{17} . In some cases, the concentration of the infectious particles is 7×10^7 , 7×10^8 , 7×10^9 , 7×10^{10} , 7×10^{11} , 7×10^{12} , 7×10^{13} , 7×10^{14} , 7×10^{15} , 7×10^{16} , or 7×10^{17} . In some cases, the concentration of the infectious particles is 8×10^7 , 8×10^8 , 8×10^9 , 8×10^{10} , 8×10^{11} , 8×10^{12} , 8×10^{13} , 8×10^{14} , 8×10^{15} , 8×10^{16} , or 8×10^{17} . In some cases, the concentration of the infectious particles is 9×10^7 , 9×10^8 , 9×10^9 , 9×10^{10} , 9×10^{11} , 9×10^{12} , 9×10^{13} , 9×10^{14} , 9×10^{15} , 9×10^{16} , or 9×10^{17} .

[0111] Disclosed herein, in some embodiments are formulations of pharmaceutically-acceptable excipients and carrier solutions suitable for delivery of the rAAV compositions described herein, as well as suitable dosing and treatment regimens for using the particular compositions described herein in a variety of treatment regimens. In some embodiments, the amount of therapeutic gene expression product in each therapeutically-useful composition may be prepared is such a way that a suitable dosage will be obtained in any given unit dose of the compound. Factors such as solubility, bioavailability, biological half-life, route of administration, product shelf life, as well as other pharmacological considerations will be contemplated by one skilled in the art of preparing such pharmaceutical formulations, and as such, a variety of dosages and treatment regimens may be desirable.

[0112] In some embodiments, the pharmaceutical forms of the rAAV-based viral compositions suitable for injectable use include sterile aqueous solutions or dispersions and sterile powders for the extemporaneous preparation of sterile injectable solutions or dispersions. The carrier can be a solvent or dispersion medium containing, for example,

water, ethanol, polyol (e.g., glycerol, propylene glycol, and liquid polyethylene glycol, and the like), suitable mixtures thereof, and/or vegetable oils. Proper fluidity may be maintained, for example, by the use of a coating, such as lecithin, by the maintenance of the required particle size in the case of dispersion and by the use of surfactants. The prevention of the action of microorganisms can be brought about by various antibacterial and antifungal agents, for example, parabens, chlorobutanol, phenol, sorbic acid, thimerosal, and the like. In many cases, it will be preferable to include isotonic agents, for example, sugars or sodium chloride.

[0113] In some cases, for administration of an injectable aqueous solution, the solution may be suitably buffered, if necessary, and the liquid diluent first rendered isotonic with sufficient saline or glucose. These particular aqueous solutions are especially suitable for intravenous, intramuscular, subcutaneous and intraperitoneal administration. Some variation in dosage will necessarily occur depending on the condition of the subject being treated. The person responsible for administration will, in any event, determine the appropriate dose for the individual subject. Moreover, for human administration, preparations should meet sterility, pyrogenicity, and the general safety and purity standards as required by FDA Office of Biologics standards.

[0114] Disclosed herein are sterile injectable solutions comprising the rAAV compositions disclosed herein, which are prepared by incorporating the rAAV compositions disclosed herein in the required amount in the appropriate solvent with several of the other ingredients enumerated above, as required, followed by filtered sterilization. Generally, dispersions are prepared by incorporating the various sterilized active ingredients into a sterile vehicle which contains the basic dispersion medium and the required other ingredients from those enumerated above. In the case of sterile powders for the preparation of sterile injectable solutions, the preferred methods of preparation are vacuum-drying and freeze-drying techniques which yield a powder of the active ingredient plus any additional desired ingredient from a previously sterile-filtered solution thereof. Injectible solutions may be advantageous for systemic administration, for example by intravenous or intrathecal administration.

[0115] Suitable dose and dosage administrated to a subject is determined by factors including, but not limited to, the particular therapeutic rAAV composition, disease condition and its severity, the identity (e.g., weight, sex, age) of the subject in need of treatment, and can be determined according to the particular circumstances surrounding the case, including, e.g., the specific agent being administered, the route of administration, the condition being treated, and the subject or host being treated.

[0116] The amount of rAAV compositions and time of administration of such compositions will be within the purview of the skilled artisan having benefit of the present teachings. It is likely, however, that the administration of therapeutically-effective amounts of the disclosed compositions may be achieved by a single administration, for example, a single injection of sufficient numbers of infectious particles to provide therapeutic benefit to the patient undergoing such treatment. This is made possible, at least in part, by the fact that certain target cells (e.g., neurons) do not divide, obviating the need for multiple or chronic dosing.

[0117] In certain embodiments, the data obtained from cell culture assays and animal studies are used in formulating the

therapeutically effective daily dosage range and/or the therapeutically effective unit dosage amount for use in mammals, including humans. In certain embodiments, the dosage range and/or the unit dosage amount varies within this range depending upon the dosage form employed and the route of administration utilized.

Combination Therapies

[0118] A therapeutic rAAV may be used alone or in combination with an additional therapeutic agent (together, “therapeutic agents”). In some cases, a therapeutic rAAV as used herein is administered alone. The therapeutic agent may be administered together or sequentially in a combination therapy. The combination therapy may be administered within the same day, or may be administered one or more days, weeks, months, or years apart.

[0119] The additional therapeutic agent can comprise a small molecule. The additional therapeutic agent can comprise an antibody, or antigen-binding fragment. The additional therapeutic agent can include lipid nanoparticle-based therapies, anti-sense oligonucleotide therapies, as well as other viral therapies.

[0120] The additional therapeutic agent can comprise a cell-based therapy. Exemplary cell-based therapies include without limitation immune effector cell therapy, chimeric antigen receptor T-cell (CAR-T) therapy, natural killer cell therapy and chimeric antigen receptor natural killer (NK) cell therapy. Either NK cells, or CAR-NK cells, or a combination of both NK cells and CAR-NK cells can be used in combination with the methods disclosed herein. In some embodiments, the NK cells and CAR-NK cells are derived from human induced pluripotent stem cells (iPSC), umbilical cord blood, or a cell line. The NK cells and CAR-NK cells can comprise a cytokine receptor and a suicide gene. The cell-based therapy can comprise a stem cell therapy. The stem cell therapy may be embryonic or somatic stem cells. The stem cells may be isolated from a donor (allogeneic) or isolated from the subject (autologous). The stem cells may be expanded adipose-derived stem cells (eASCs), hematopoietic stem cells (HSCs), mesenchymal stem (stromal) cells (MSCs), or induced pluripotent stem cells (iPSCs) derived from the cells of the subject.

Kits

[0121] Disclosed herein are kits comprising compositions disclosed herein. Also disclosed herein are kits for the treatment or prevention of a disease or conditions of the brain, heart, or brain and heart. In some instances, the disease or condition is cancer, a pathogen infection, pulmonary disease or condition, neurological disease, muscular disease, or an immune disorder, such as those described herein.

[0122] In one embodiment, a kit can include a therapeutic or prophylactic composition containing an effective amount of a composition of a rAAV particle encapsidating a recombinant AAV vector encoding a therapeutic nucleic acid (e.g., therapeutic nucleic acid) and a recombinant AAV (rAAV) capsid protein of the present disclosure. In another embodiment, a kit can include a therapeutic or prophylactic composition containing an effective amount of cells modified by the TAAV described herein (“modified cell”), in unit dosage form that express therapeutic nucleic acid. In some embodiments, a kit comprises a sterile container which can contain

a therapeutic composition; such containers can be boxes, ampules, bottles, vials, tubes, bags, pouches, blister-packs, or other suitable container forms known in the art. Such containers can be made of plastic, glass, laminated paper, metal foil, or other materials suitable for holding medications.

[0123] In some instances, the kit further comprises a cell. In some instances, the cell is mammalian. In some instances, the cell is immortalized. In some instances, the immortalized cell is an embryonic stem cell. In some instances, the embryonic stem cell is a human embryonic stem cell. In some instances, the human embryonic stem cell is a human embryonic kidney 293 (HEK-293) cell. In some instances, the kit further comprises an AAV vector comprising a heterologous nucleic acid encoding a therapeutic gene expression product. In some instances, the AAV vector is an episome.

[0124] In some cases, rAAV are provided together with instructions for administering the rAAV to a subject having or at risk of developing the disease or condition (e.g., disease of the brain, heart, or brain and heart). Instructions can generally include information about the use of the composition for the treatment or prevention of the disease or condition.

[0125] In some cases, the instructions include at least one of the following: description of the therapeutic rAAV composition; dosage schedule and administration for treatment or prevention of the disease or condition disclosed herein; precautions; warnings; indications; counter-indications; overdosage information; adverse reactions; animal pharmacology; clinical studies; and/or references. The instructions can be printed directly on the container (when present), or as a label applied to the container, or as a separate sheet, pamphlet, card, or folder supplied in or with the container. In some cases, instructions provide procedures for administering the rAAV to the subject alone. In some instances, the instructions provide that the rAAV is formulated for systemic delivery.

Definitions

[0126] The terminology used herein is for the purpose of describing particular cases only and is not intended to be limiting. As used herein, the singular forms “a”, “an” and “the” are intended to include the plural forms as well, unless the context clearly indicates otherwise. Furthermore, to the extent that the terms “including”, “includes”, “having”, “has”, “with”, or variants thereof are used in either the detailed description and/or the claims, such terms are intended to be inclusive in a manner similar to the term “comprising.”

[0127] The term “about” or “approximately” means within an acceptable error range for the particular value as determined by one of ordinary skill in the art, which will depend in part on how the value is measured or determined, e.g., the limitations of the measurement system. For example, “about” can mean within 1 or more than 1 standard deviation, per the practice in the given value. Where particular values are described in the application and claims, unless otherwise stated the term “about” should be assumed to mean an acceptable error range for the particular value.

[0128] As used herein “consisting essentially of” when used to define compositions and methods, shall mean excluding other elements of any essential significance to the combination for the stated purpose. Thus, a composition

consisting essentially of the elements as defined herein would not exclude other materials or steps that do not materially affect the basic and novel characteristic(s) of the claimed disclosure, such as compositions for treating skin disorders like acne, eczema, psoriasis, and rosacea.

[0129] The terms “homologous,” “homology,” or “percent homology” are used herein to generally mean an amino acid sequence or a nucleic acid sequence having the same, or similar sequence to a reference sequence. Percent homology of sequences can be determined using the most recent version of BLAST, as of the filing date of this application.

[0130] The terms “increased,” or “increase” are used herein to generally mean an increase by a statistically significant amount. In some embodiments, the terms “increased,” or “increase,” mean an increase of at least 10% as compared to a reference level, for example an increase of at least about 10%, at least about 20%, or at least about 30%, or at least about 40%, or at least about 50%, or at least about 60%, or at least about 70%, or at least about 80%, or at least about 90% or up to and including a 100% increase or any increase between 10-100% as compared to a reference level, standard, or control. Other examples of “increase” include an increase of at least 2-fold, at least 5-fold, at least 10-fold, at least 20-fold, at least 50-fold, at least 100-fold, at least 1000-fold or more as compared to a reference level.

[0131] The terms, “decreased” or “decrease” are used herein generally to mean a decrease by a statistically significant amount. In some embodiments, “decreased” or “decrease” means a reduction by at least 10% as compared to a reference level, for example a decrease by at least about 20%, or at least about 30%, or at least about 40%, or at least about 50%, or at least about 60%, or at least about 70%, or at least about 80%, or at least about 90% or up to and including a 100% decrease (e.g., absent level or non-detectable level as compared to a reference level), or any decrease between 10-100% as compared to a reference level. In the context of a marker or symptom, by these terms is meant a statistically significant decrease in such level. The decrease can be, for example, at least 10%, at least 20%, at least 30%, at least 40% or more, and is preferably down to a level accepted as within the range of normal for an individual without a given disease.

[0132] The terms “subject” is any organism. In some instances, the organism is a mammal. Non-limiting examples of mammal include, any member of the mammalian class: humans, non-human primates such as chimpanzees, and other apes and monkey species; farm animals such as cattle, horses, sheep, goats, swine; domestic animals such as rabbits, dogs, and cats; laboratory animals including rodents, such as rats, mice and guinea pigs, and the like. In certain aspects, the mammal is a human. The term “animal” as used herein comprises human beings and non-human animals. In one embodiment, a “non-human animal” is a mammal, for example a rodent such as rat or a mouse. In one embodiment, a “non-human primate” is a mammal, for example a monkey. In some instances, the subject is a patient, which as used herein, may refer to a subject diagnosed with a particular disease or disorder.

[0133] The term “gene,” as used herein, refers to a segment of nucleic acid that encodes an individual protein or RNA (also referred to as a “coding sequence” or “coding region”), optionally together with associated regulatory

region such as promoter, operator, terminator and the like, which may be located upstream or downstream of the coding sequence.

[0134] The term “adeno-associated virus,” or “AAV” as used herein refers to the adeno-associated virus or derivatives thereof. Non-limited examples of AAV’s include AAV type 1 (AAV1), AAV type 2 (AAV2), AAV type 3 (AAV3), AAV type 4 (AAV4), AAV type 5 (AAV5), AAV type 6 (AAV6), AAV type 7 (AAV7), AAV type 8 (AAV8), AAV type 9 (AAV9), AAV type 10 (AAV10), AAV type 11 (AAV11), AAV type 12 (AAV12), avian AAV, bovine AAV, canine AAV, equine AAV, primate AAV, non-primate AAV, and ovine AAV. In some instances, the AAV is described as a “Primate AAV,” which refers to AAV that infect primates. Likewise an AAV may infect bovine animals (e.g., “bovine AAV”, and the like). In some instances, the AAV is wildtype, or naturally occurring. In some instances, the AAV is recombinant.

[0135] The term “AAV capsid” as used herein refers to a capsid protein or peptide of an adeno-associated virus. In some instances, the AAV capsid protein is configured to encapsidate genetic information (e.g., a transgene, therapeutic nucleic acid, viral genome). In some instances, the AAV capsid of the instant disclosure is a modified AAV capsid, relative to a corresponding parental AAV capsid protein.

[0136] The term “tropism” as used herein refers to a quality or characteristic of the AAV capsid that may include specificity for, and/or an increase or a decrease in enrichment of, expressing the encapsidated genetic information into an in vivo environment, relative to a second in vivo environment. An in vivo environment, in some instances, is a cell-type. An in vivo environment, in some instances, is an organ or organ system.

[0137] The term “AAV vector” as used herein refers to nucleic acid polymer encoding genetic information related to the virus. The AAV vector may be a recombinant AAV vector (rAAV), which refers to an AAV vector generated using recombinatorial genetics methods. In some instances, the rAAV vector comprises at least one heterologous polynucleotide (e.g. a polynucleotide other than a wild-type or naturally occurring AAV genome such as a transgene).

[0138] The term “AAV particle” as used herein refers to an AAV virus, virion, AAV capsid protein or component thereof. In some cases, the AAV particle is modified relative to a parental AAV particle.

[0139] The term “gene product” or “gene expression product” refers to an expression product of a polynucleotide sequence such as, for e.g., a polypeptide, peptide, protein or RNA, including interfering RNA (e.g., siRNA, miRNA, shRNA) and messenger RNA (mRNA).

[0140] The term “heterologous” as used herein refers to a genetic element (e.g., coding region) or gene expression product (e.g., RNA, protein) that is derived from a genetically distinct entity from that of the rest of the entity to which it is being compared.

[0141] The term “endogenous” as used herein refers to a genetic element (e.g., coding region) or gene expression product (e.g., RNA, protein) that is naturally occurring in or associated with an organism or a particular cell within the organism.

[0142] The terms “treat,” “treating,” and “treatment” as used herein refers to alleviating or abrogating a disorder, disease, or condition; or one or more of the symptoms associated with the disorder, disease, or condition; or alle-

viating or eradicating a cause of the disorder, disease, or condition itself. Desirable effects of treatment can include, but are not limited to, preventing occurrence or recurrence of disease, alleviation of symptoms, diminishing any direct or indirect pathological consequences of the disease, preventing metastasis, decreasing the rate of disease progression, amelioration or palliation of the disease state and remission or improved prognosis.

[0143] The term “therapeutically effective amount” refers to the amount of a compound or therapy that, when administered, is sufficient to prevent development of, or alleviate to some extent, one or more of the symptoms of a disorder, disease, or condition of the disease; or the amount of a compound that is sufficient to elicit biological or medical response of a cell, tissue, system, animal, or human that is being sought by a researcher, veterinarian, medical doctor, or clinician.

[0144] The term “pharmaceutically acceptable carrier,” “pharmaceutically acceptable excipient,” “physiologically acceptable carrier,” or “physiologically acceptable excipient” refers to a pharmaceutically acceptable material, composition, or vehicle, such as a liquid or solid filler, diluent, excipient, solvent, or encapsulating material. A component can be “pharmaceutically acceptable” in the sense of being compatible with the other ingredients of a pharmaceutical formulation. It can also be suitable for use in contact with the tissue or organ of humans and animals without excessive toxicity, irritation, allergic response, immunogenicity, or other problems or complications, commensurate with a reasonable benefit/risk ratio. See, Remington: The Science and Practice of Pharmacy, 21st Edition; Lippincott Williams & Wilkins: Philadelphia, PA, 2005; Handbook of Pharmaceutical Excipients, 5th Edition; Rowe et al., Eds., The Pharmaceutical Press and the American Pharmaceutical Association: 2005; and Handbook of Pharmaceutical Additives, 3rd Edition; Ash and Ash Eds., Gower Publishing Company: 2007; Pharmaceutical Preformulation and Formulation, Gibson Ed., CRC Press LLC: Boca Raton, FL, 2004).

[0145] The term “pharmaceutical composition” refers to a mixture of a compound disclosed herein with other chemical components, such as diluents or carriers. The pharmaceutical composition can facilitate administration of the compound to an organism. Multiple techniques of administering a compound exist in the art including, but not limited to, systemic administration.

[0146] Non-limiting examples of “sample” include any material from which nucleic acids and/or proteins can be obtained. As non-limiting examples, this includes whole blood, peripheral blood, plasma, serum, saliva, mucus, urine, semen, lymph, fecal extract, cheek swab, cells or other bodily fluid or tissue, including but not limited to tissue obtained through surgical biopsy or surgical resection. Alternatively, a sample can be obtained through primary patient derived cell lines, or archived patient samples in the form of preserved samples, or fresh frozen samples.

[0147] The term “in vivo” is used to describe an event that takes place in a subject’s body.

[0148] The term “in vitro” is used to describe an event that takes places contained in a container for holding laboratory reagent such that it is separated from the biological source from which the material is obtained. In vitro assays can encompass cell-based assays in which living or dead cells

are employed. In vitro assays can also encompass a cell-free assay in which no intact cells are employed.

[0149] The term “brain” means a tissue selected from brain, thalamus, cortex, putamen, lateral ventricles, medulla, the pons, the amygdala, the motor cortex, caudate, hypothalamus, striatum, ventral midbrain, neocortex, basal ganglia, hippocampus, cerebrum, cerebellum, brain stem, and spinal cord. The brain includes a variety of cortical and subcortical areas, including the frontal, temporal, occipital and parietal lobes.

[0150] The term “systemic delivery” is defined as a route of administration of medication or other substance into a circulatory system so that the entire body is affected. Administration can take place via enteral administration (absorption of the drug through the gastrointestinal tract) or parenteral administration (generally injection, infusion, or implantation). “Circulatory system” includes both blood or cerebrospinal fluid circulatory systems. Examples of systemic administration for the brain include intraarterial, intravenous or intrathecal injection. Other examples include administration to the cerebrospinal fluid at any location, in the spine (i.e. but not limited to lumbar) or brain (i.e. but not limited to cisterna magna). The terms “systemic administration” and “systemic delivery” are used interchangeably.

[0151] The section headings used herein are for organizational purposes only and are not to be construed as limiting the subject matter described.

[0152] While preferred embodiments of the present invention have been shown and described herein, it will be obvious to those skilled in the art that such embodiments are provided by way of example only. Numerous variations, changes, and substitutions will now occur to those skilled in the art without departing from the invention. It should be understood that various alternatives to the embodiments of the invention described herein may be employed in practicing the invention. It is intended that the following claims define the scope of the invention and that methods and structures within the scope of these claims and their equivalents be covered thereby.

[0153] All publications, patents, and patent applications mentioned in this specification are herein incorporated by reference to the same extent as if each individual publication, patent, or patent application was specifically and individually indicated to be incorporated by reference.

EXAMPLES

Example 1

Method of Identifying the Modified Capsid Proteins in Cynomolgus Macaques

[0154] Following IV injection, unmodified AAV9 does not have sufficient tissue enrichment to treat many human diseases that would otherwise be amenable to treatment via delivery of an AAV cargo of 4.7 kbp DNA. Directed evolution of AAV9 was performed as a means of increasing viral tissue enrichment to levels that enable disease treatment.

[0155] Adeno-Associated Virus serotype 9 (AAV9) was modified by inserting a stretch of 7 amino acids (7mer) following residue #588 in its capsid coding sequence. The 7mer was randomly generated via degenerate DNA base-pairs, thus sampling all 207 possible 7mer amino acid

sequences. Three batches of this library with billions of variants were prepared separately.

[0156] One batch was IV injected into three African Green Monkeys, then three weeks later the animals were sacrificed and tissue samples were screened with PCR to uncover the best 7mer sequences that caused improved enrichment relative to AAV9 in the brain and heart. The other batch was IV injected into two Cynomologus Macaque Non-Human Primates, then two weeks later the animals were sacrificed and tissue samples were screened with PCR to uncover the best 7mer sequences that caused improved enrichment relative to AAV9 in the brain and heart. The third batch was delivered

identically to the second batch and data were analyzed identically, but in a separate study using different Cynomologus Macaques.

[0157] Following these three PCR screenings of tissues, the top 41,000 variants identified in the NHP brains and hearts were brought forward into a 'round 2' screening. This smaller library was IV injected into three Cynomologus Macaque Non-Human Primates, then two weeks later the animals were sacrificed and tissue samples were screened with PCR to uncover the best 7mer sequences that caused further improved enrichment relative to AAV9 in the brain and heart.

SEQUENCE LISTING

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SEQUENCE: 25	
AQASGHAPTA Q	11
SEQ ID NO: 26	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 26	
AQASGSNAHA Q	11
SEQ ID NO: 27	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 27	
AQASLAVTSA Q	11
SEQ ID NO: 28	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic

-continued

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 28
AQASRDSGSA Q                                         11

SEQ ID NO: 29      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 29
AQASRSESYA Q                                         11

SEQ ID NO: 30      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 30
AQASTRVVNA Q                                         11

SEQ ID NO: 31      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 31
AQATSDRPTA Q                                         11

SEQ ID NO: 32      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 32
AQATVTHKDA Q                                         11

SEQ ID NO: 33      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 33
AQAVGTMAPA Q                                         11

SEQ ID NO: 34      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 34
AQDASRVLAA Q                                         11

SEQ ID NO: 35      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 35
AQDMTGLVIA Q                                         11

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SEQ ID NO: 36      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 36
AQDNRTRTNA Q                               11

SEQ ID NO: 37      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 37
AQDPSRSASA Q                               11

SEQ ID NO: 38      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 38
AQDPPTTRNEA Q                               11

SEQ ID NO: 39      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 39
AQDRSNITLA Q                               11

SEQ ID NO: 40      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 40
AQDSAQNQGA Q                               11

SEQ ID NO: 41      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 41
AQDSGPKAA Q                                11

SEQ ID NO: 42      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 42
AQDSIQYSFA Q                               11

SEQ ID NO: 43      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein

```

-continued

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SEQUENCE: 43          organism = synthetic construct
AQDSREQGRA Q           11

SEQ ID NO: 44          moltype = AA  length = 11
FEATURE               Location/Qualifiers
REGION                1..11
note = Synthetic
source                1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 44          organism = synthetic construct
AQDSRLGVTA Q           11

SEQ ID NO: 45          moltype = AA  length = 11
FEATURE               Location/Qualifiers
REGION                1..11
note = Synthetic
source                1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 45          organism = synthetic construct
AQDSRQPPNA Q           11

SEQ ID NO: 46          moltype = AA  length = 11
FEATURE               Location/Qualifiers
REGION                1..11
note = Synthetic
source                1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 46          organism = synthetic construct
AQDSRVPSQA Q           11

SEQ ID NO: 47          moltype = AA  length = 11
FEATURE               Location/Qualifiers
REGION                1..11
note = Synthetic
source                1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 47          organism = synthetic construct
AQDSVNLSSA Q           11

SEQ ID NO: 48          moltype = AA  length = 11
FEATURE               Location/Qualifiers
REGION                1..11
note = Synthetic
source                1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 48          organism = synthetic construct
AQDVRHGGTA Q           11

SEQ ID NO: 49          moltype = AA  length = 11
FEATURE               Location/Qualifiers
REGION                1..11
note = Synthetic
source                1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 49          organism = synthetic construct
AQDVRNSNTSA Q           11

SEQ ID NO: 50          moltype = AA  length = 11
FEATURE               Location/Qualifiers
REGION                1..11
note = Synthetic
source                1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 50          organism = synthetic construct
AQDVSVSFAF Q           11

SEQ ID NO: 51          moltype = AA  length = 11
FEATURE               Location/Qualifiers

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-continued

REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 51	
AQDYAYRTGA Q	11
SEQ ID NO: 52	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 52	
AQEHTRGETA Q	11
SEQ ID NO: 53	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 53	
AQEITHSHSA Q	11
SEQ ID NO: 54	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 54	
AQENHTFNKA Q	11
SEQ ID NO: 55	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 55	
AQENRVANKA Q	11
SEQ ID NO: 56	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 56	
AQEPERFMFA Q	11
SEQ ID NO: 57	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 57	
AQEPLRLATDA Q	11
SEQ ID NO: 58	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 58	

-continued

AQERTASLHA Q	11
SEQ ID NO: 59	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 59	
AQESNRHPYA Q	11
SEQ ID NO: 60	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 60	
AQESSHTGGA Q	11
SEQ ID NO: 61	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 61	
AQESVGRGEA Q	11
SEQ ID NO: 62	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 62	
AQEVEGGGSKA Q	11
SEQ ID NO: 63	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 63	
AQFALPVPSA Q	11
SEQ ID NO: 64	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 64	
AQPGSVQDRA Q	11
SEQ ID NO: 65	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 65	
AQPGTGGVPA Q	11
SEQ ID NO: 66	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
	note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 66
AQFGTGMGDKA Q                                     11

SEQ ID NO: 67          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 67
AQFGVVTAGSA Q                                     11

SEQ ID NO: 68          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 68
AQFINTVPVA Q                                     11

SEQ ID NO: 69          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 69
AQFLVGGTVA Q                                     11

SEQ ID NO: 70          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 70
AQFSNFLPAA Q                                     11

SEQ ID NO: 71          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 71
AQFSGMSNSA Q                                     11

SEQ ID NO: 72          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 72
AQFVKIAKSA Q                                     11

SEQ ID NO: 73          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 73
AQFVTLVTSA Q                                     11

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SEQ ID NO: 74      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 74
AQGADARLHA Q                               11

SEQ ID NO: 75      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 75
AQGDAARSGA Q                               11

SEQ ID NO: 76      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 76
AQGGGSHSSA Q                               11

SEQ ID NO: 77      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 77
AQGHQHVTEA Q                               11

SEQ ID NO: 78      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 78
AQGHSETRLA Q                               11

SEQ ID NO: 79      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 79
AQGIGHMNDA Q                               11

SEQ ID NO: 80      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 80
AQGLALTNA Q                                11

SEQ ID NO: 81      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein

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SEQUENCE: 81          organism = synthetic construct
AQGLAVASPA Q           11

SEQ ID NO: 82          moltype = AA  length = 11
FEATURE               Location/Qualifiers
REGION                1..11
note = Synthetic
source                1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 82          organism = synthetic construct
AQGLSSPLAA Q           11

SEQ ID NO: 83          moltype = AA  length = 11
FEATURE               Location/Qualifiers
REGION                1..11
note = Synthetic
source                1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 83          organism = synthetic construct
AQGLVLSSTA Q           11

SEQ ID NO: 84          moltype = AA  length = 11
FEATURE               Location/Qualifiers
REGION                1..11
note = Synthetic
source                1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 84          organism = synthetic construct
AQGLVSSSVA Q           11

SEQ ID NO: 85          moltype = AA  length = 11
FEATURE               Location/Qualifiers
REGION                1..11
note = Synthetic
source                1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 85          organism = synthetic construct
AQGLYNIRSA Q           11

SEQ ID NO: 86          moltype = AA  length = 11
FEATURE               Location/Qualifiers
REGION                1..11
note = Synthetic
source                1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 86          organism = synthetic construct
AQGNAVSVAA Q           11

SEQ ID NO: 87          moltype = AA  length = 11
FEATURE               Location/Qualifiers
REGION                1..11
note = Synthetic
source                1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 87          organism = synthetic construct
AQGNHTRHAA Q           11

SEQ ID NO: 88          moltype = AA  length = 11
FEATURE               Location/Qualifiers
REGION                1..11
note = Synthetic
source                1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 88          organism = synthetic construct
AQGNLTRLTA Q           11

SEQ ID NO: 89          moltype = AA  length = 11
FEATURE               Location/Qualifiers

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-continued

REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 89	
AQGNNTRAHA Q	11
SEQ ID NO: 90	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 90	
AQGNNTTSRA Q	11
SEQ ID NO: 91	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 91	
AQGNQSNAAA Q	11
SEQ ID NO: 92	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 92	
AQGNRTRAPAA Q	11
SEQ ID NO: 93	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 93	
AQGNRTTNDA Q	11
SEQ ID NO: 94	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 94	
AQGNTTVNQA Q	11
SEQ ID NO: 95	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 95	
AQGSDSRNSA Q	11
SEQ ID NO: 96	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 96	

-continued

AQGSFTQFSA Q	11
SEQ ID NO: 97	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 97	
AQGSGASVLA Q	11
SEQ ID NO: 98	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 98	
AQGSGGISSHA Q	11
SEQ ID NO: 99	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 99	
AQGSGTPGHA Q	11
SEQ ID NO: 100	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 100	
AQGSLTVLKA Q	11
SEQ ID NO: 101	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 101	
AQGSMMHKDA Q	11
SEQ ID NO: 102	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 102	
AQGSSRNEVA Q	11
SEQ ID NO: 103	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 103	
AQGTGSERLA Q	11
SEQ ID NO: 104	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 104
AQGTQDRQLA Q                                         11

SEQ ID NO: 105          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 105
AQGTTLSSSA Q                                         11

SEQ ID NO: 106          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 106
AQGTTSHHLA Q                                         11

SEQ ID NO: 107          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 107
AQGVGLPTTA Q                                         11

SEQ ID NO: 108          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 108
AQGVGSSLSA Q                                         11

SEQ ID NO: 109          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 109
AQGVHASTQA Q                                         11

SEQ ID NO: 110          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 110
AQGVHGNSAA Q                                         11

SEQ ID NO: 111          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 111
AQGVISRPA Q                                         11

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SEQ ID NO: 112      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 112     AQGVSAVAAA Q
                           11

SEQ ID NO: 113      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 113     AQGVTSVVAA Q
                           11

SEQ ID NO: 114      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 114     AQHAGNITIA Q
                           11

SEQ ID NO: 115      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 115     AQHGSRSRSDYA Q
                           11

SEQ ID NO: 116      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 116     AQHGVTTQSA Q
                           11

SEQ ID NO: 117      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 117     AQHGVVVSSSA Q
                           11

SEQ ID NO: 118      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 118     AQHHSPQSSA Q
                           11

SEQ ID NO: 119      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein

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SEQUENCE: 119	organism = synthetic construct
AQHISLHQQA Q	11
SEQ ID NO: 120	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 120	11
AQHISSVQPA Q	
SEQ ID NO: 121	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 121	11
AQHLGTVSAA Q	
SEQ ID NO: 122	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 122	11
AQHMSGVNAA Q	
SEQ ID NO: 123	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 123	11
AQHNVMSSFA Q	
SEQ ID NO: 124	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 124	11
AQHNVSLANA Q	
SEQ ID NO: 125	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 125	11
AQHQLHHGAA Q	
SEQ ID NO: 126	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 126	11
AQHSSGTSGA Q	
SEQ ID NO: 127	moltype = AA length = 11
FEATURE	Location/Qualifiers

-continued

REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 127	
AQHSSSNIIA Q	11
SEQ ID NO: 128	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 128	
AQHSTKAEVA Q	11
SEQ ID NO: 129	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 129	
AQHTANLLDA Q	11
SEQ ID NO: 130	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 130	
AQHTGASLTA Q	11
SEQ ID NO: 131	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 131	
AQHTGPLSNA Q	11
SEQ ID NO: 132	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 132	
AQHTLPIMSA Q	11
SEQ ID NO: 133	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 133	
AQHTSTREMA Q	11
SEQ ID NO: 134	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 134	

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AQHTSVRIDA Q	11
SEQ ID NO: 135 FEATURE REGION source SEQUENCE: 135 AQHTTSHMEA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 136 FEATURE REGION source SEQUENCE: 136 AQHYVSVPTA Q	11
SEQ ID NO: 137 FEATURE REGION source SEQUENCE: 137 AQIAGRQNQSA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 138 FEATURE REGION source SEQUENCE: 138 AQIAHLSSVA Q	11
SEQ ID NO: 139 FEATURE REGION source SEQUENCE: 139 AQIASSPLSA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 140 FEATURE REGION source SEQUENCE: 140 AQIASSSSLHA Q	11
SEQ ID NO: 141 FEATURE REGION source SEQUENCE: 141 AQIGGLTPA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 142 FEATURE REGION	11
	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 142
AQIGSLTGAA Q                                         11

SEQ ID NO: 143          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 143
AQIGSMNEKA Q                                         11

SEQ ID NO: 144          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 144
AQIGSSMPNA Q                                         11

SEQ ID NO: 145          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 145
AQILATGGSA Q                                         11

SEQ ID NO: 146          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 146
AQILDRSNMA Q                                         11

SEQ ID NO: 147          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 147
AQILRDGHQA Q                                         11

SEQ ID NO: 148          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 148
AQILSEHRVA Q                                         11

SEQ ID NO: 149          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 149
AQILTRSTFA Q                                         11

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-continued

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SEQ ID NO: 150      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 150
AQILVLTSTSA Q                           11

SEQ ID NO: 151      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 151
AQIMTSTLPA Q                           11

SEQ ID NO: 152      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 152
AQINRETTSFA Q                           11

SEQ ID NO: 153      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 153
AQINSAGLLA Q                           11

SEQ ID NO: 154      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 154
AQISAAASTSA Q                           11

SEQ ID NO: 155      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 155
AQISAGALIA Q                           11

SEQ ID NO: 156      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 156
AQISLTNSNA Q                           11

SEQ ID NO: 157      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein

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-continued

SEQUENCE: 157	organism = synthetic construct	
AQISSSRNGA Q		11
SEQ ID NO: 158	moltype = AA length = 11	
FEATURE	Location/Qualifiers	
REGION	1..11	
source	note = Synthetic	
	1..11	
	mol_type = protein	
	organism = synthetic construct	
SEQUENCE: 158		
AQISTGKLGA Q		11
SEQ ID NO: 159	moltype = AA length = 11	
FEATURE	Location/Qualifiers	
REGION	1..11	
source	note = Synthetic	
	1..11	
	mol_type = protein	
	organism = synthetic construct	
SEQUENCE: 159		
AQISTRESIA Q		11
SEQ ID NO: 160	moltype = AA length = 11	
FEATURE	Location/Qualifiers	
REGION	1..11	
source	note = Synthetic	
	1..11	
	mol_type = protein	
	organism = synthetic construct	
SEQUENCE: 160		
AQITGQMSAA Q		11
SEQ ID NO: 161	moltype = AA length = 11	
FEATURE	Location/Qualifiers	
REGION	1..11	
source	note = Synthetic	
	1..11	
	mol_type = protein	
	organism = synthetic construct	
SEQUENCE: 161		
AQITGQMSVA Q		11
SEQ ID NO: 162	moltype = AA length = 11	
FEATURE	Location/Qualifiers	
REGION	1..11	
source	note = Synthetic	
	1..11	
	mol_type = protein	
	organism = synthetic construct	
SEQUENCE: 162		
AQITSSPTSA Q		11
SEQ ID NO: 163	moltype = AA length = 11	
FEATURE	Location/Qualifiers	
REGION	1..11	
source	note = Synthetic	
	1..11	
	mol_type = protein	
	organism = synthetic construct	
SEQUENCE: 163		
AQITSSVMQA Q		11
SEQ ID NO: 164	moltype = AA length = 11	
FEATURE	Location/Qualifiers	
REGION	1..11	
source	note = Synthetic	
	1..11	
	mol_type = protein	
	organism = synthetic construct	
SEQUENCE: 164		
AQITTHPTTA Q		11
SEQ ID NO: 165	moltype = AA length = 11	
FEATURE	Location/Qualifiers	

-continued

REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 165	
AQIVAGHRDA Q	11
SEQ ID NO: 166	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 166	
AQIVDTRNPA Q	11
SEQ ID NO: 167	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 167	
AQIVVGKPMEA Q	11
SEQ ID NO: 168	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 168	
AQIVLPSTYA Q	11
SEQ ID NO: 169	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 169	
AQIVSGSLGA Q	11
SEQ ID NO: 170	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 170	
AQIYSSSVSA Q	11
SEQ ID NO: 171	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 171	
AQKDQNRESA Q	11
SEQ ID NO: 172	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 172	

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AQKDHSYNA Q	11
SEQ ID NO: 173 FEATURE REGION source SEQUENCE: 173 AQKEQQAVSA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 174 FEATURE REGION source SEQUENCE: 174 AQKHNIIPNVA Q	11
SEQ ID NO: 175 FEATURE REGION source SEQUENCE: 175 AQKPTVGFAA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 176 FEATURE REGION source SEQUENCE: 176 AQKQAGTSVA Q	11
SEQ ID NO: 177 FEATURE REGION source SEQUENCE: 177 AQKQHSDHPA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 178 FEATURE REGION source SEQUENCE: 178 AQKSQTNDVA Q	11
SEQ ID NO: 179 FEATURE REGION source SEQUENCE: 179 AQKSSLRFYA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 180 FEATURE REGION	11
	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 180
AQKTSSSTVA Q                                         11

SEQ ID NO: 181      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 181
AQLAHQTRDA Q                                         11

SEQ ID NO: 182      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 182
AQLAQAAASAA Q                                         11

SEQ ID NO: 183      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 183
AQLARTTTDA Q                                         11

SEQ ID NO: 184      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 184
AQLASASSVVA Q                                         11

SEQ ID NO: 185      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 185
AQLASSTLMA Q                                         11

SEQ ID NO: 186      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 186
AQLDRSGSTA Q                                         11

SEQ ID NO: 187      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 187
AQLDTSTALA Q                                         11

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SEQ ID NO: 188	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 188	
AQLGAGPHVA Q	11
SEQ ID NO: 189	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 189	
AQLGGSYGSA Q	11
SEQ ID NO: 190	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 190	
AQLGSLANTA Q	11
SEQ ID NO: 191	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 191	
AQLGTNRMSA Q	11
SEQ ID NO: 192	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 192	
AQLGVSSVEA Q	11
SEQ ID NO: 193	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 193	
AQLHNTVVSA Q	11
SEQ ID NO: 194	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 194	
AQLHSPASNA Q	11
SEQ ID NO: 195	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein

-continued

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SEQUENCE: 195          organism = synthetic construct
AQLHSSPSTA Q           11

SEQ ID NO: 196          moltype = AA  length = 11
FEATURE               Location/Qualifiers
REGION                1..11
note = Synthetic
source                1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 196          organism = synthetic construct
AQLILTTSEA Q           11

SEQ ID NO: 197          moltype = AA  length = 11
FEATURE               Location/Qualifiers
REGION                1..11
note = Synthetic
source                1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 197          organism = synthetic construct
AQLKDQGSSA Q           11

SEQ ID NO: 198          moltype = AA  length = 11
FEATURE               Location/Qualifiers
REGION                1..11
note = Synthetic
source                1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 198          organism = synthetic construct
AQLLDTHYRA Q           11

SEQ ID NO: 199          moltype = AA  length = 11
FEATURE               Location/Qualifiers
REGION                1..11
note = Synthetic
source                1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 199          organism = synthetic construct
AQLLDTLMQA Q           11

SEQ ID NO: 200          moltype = AA  length = 11
FEATURE               Location/Qualifiers
REGION                1..11
note = Synthetic
source                1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 200          organism = synthetic construct
AQLITAVQAA Q           11

SEQ ID NO: 201          moltype = AA  length = 11
FEATURE               Location/Qualifiers
REGION                1..11
note = Synthetic
source                1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 201          organism = synthetic construct
AQLLLTPQLA Q           11

SEQ ID NO: 202          moltype = AA  length = 11
FEATURE               Location/Qualifiers
REGION                1..11
note = Synthetic
source                1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 202          organism = synthetic construct
AQLLRSTLPA Q           11

SEQ ID NO: 203          moltype = AA  length = 11
FEATURE               Location/Qualifiers

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-continued

REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 203	
AQLLSATTHA Q	11
SEQ ID NO: 204	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 204	
AQLSSSSNSA Q	11
SEQ ID NO: 205	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 205	
AQLMSILTMA Q	11
SEQ ID NO: 206	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 206	
AQLMSSVSAA Q	11
SEQ ID NO: 207	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 207	
AQLNHSVSGA Q	11
SEQ ID NO: 208	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 208	
AQLNHTSPGA Q	11
SEQ ID NO: 209	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 209	
AQLNPQGTSA Q	11
SEQ ID NO: 210	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 210	

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AQLNSDKSSA Q	11
SEQ ID NO: 211	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 211	
AQLNSTRTYA Q	11
SEQ ID NO: 212	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 212	
AQLNTAQSTA Q	11
SEQ ID NO: 213	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 213	
AQLNTGSNAA Q	11
SEQ ID NO: 214	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 214	
AQLNVSTTSA Q	11
SEQ ID NO: 215	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 215	
AQLPASDISA Q	11
SEQ ID NO: 216	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 216	
AQLPDKWEA Q	11
SEQ ID NO: 217	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 217	
AQLPSETKFA Q	11
SEQ ID NO: 218	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
	note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 218
AQLQSNRSDA Q                                     11

SEQ ID NO: 219          moltype = AA length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 219
AQLQSRSFGA Q                                     11

SEQ ID NO: 220          moltype = AA length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 220
AQLQTSLSLA Q                                     11

SEQ ID NO: 221          moltype = AA length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 221
AQLRNSESTA Q                                     11

SEQ ID NO: 222          moltype = AA length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 222
AQLRNSSELQ Q                                     11

SEQ ID NO: 223          moltype = AA length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 223
AQLRTDSLEA Q                                     11

SEQ ID NO: 224          moltype = AA length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 224
AQLSDHNLKA Q                                     11

SEQ ID NO: 225          moltype = AA length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 225
AQLSGFNVLA Q                                     11

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SEQ ID NO: 226	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 226	
AQLSGHFSFA Q	11
SEQ ID NO: 227	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 227	
AQLSGMSGNA Q	11
SEQ ID NO: 228	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 228	
AQLSGQSMDA Q	11
SEQ ID NO: 229	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 229	
AQLSGQVTMA Q	11
SEQ ID NO: 230	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 230	
AQLSNESRSA Q	11
SEQ ID NO: 231	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 231	
AQLSNITNSA Q	11
SEQ ID NO: 232	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 232	
AQLSQASSAA Q	11
SEQ ID NO: 233	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein

-continued

SEQUENCE: 233	organism = synthetic construct
AQLSQSGKEA Q	11
SEQ ID NO: 234	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 234	
AQLSRSFVPA Q	11
SEQ ID NO: 235	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 235	
AQLSRSSSPA Q	11
SEQ ID NO: 236	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 236	
AQLSSANLQA Q	11
SEQ ID NO: 237	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 237	
AQLSSSITQA Q	11
SEQ ID NO: 238	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 238	
AQLSSSVVNA Q	11
SEQ ID NO: 239	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 239	
AQLSSTLTSA Q	11
SEQ ID NO: 240	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 240	
AQLSSTYANA Q	11
SEQ ID NO: 241	moltype = AA length = 11
FEATURE	Location/Qualifiers

-continued

REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 241	
AQLSTDASQA Q	11
SEQ ID NO: 242	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 242	
AQLSTISSHQ Q	11
SEQ ID NO: 243	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 243	
AQLSTSGPSA Q	11
SEQ ID NO: 244	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 244	
AQLSVAQGSA Q	11
SEQ ID NO: 245	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 245	
AQLSVLSQIA Q	11
SEQ ID NO: 246	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 246	
AQLTGNQSVQ Q	11
SEQ ID NO: 247	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 247	
AQLTHTIPSQ Q	11
SEQ ID NO: 248	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 248	

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AQLTNVIMGA Q	11
SEQ ID NO: 249	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 249	
AQLTSLPQVA Q	11
SEQ ID NO: 250	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 250	
AQLTPSAAA Q	11
SEQ ID NO: 251	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 251	
AQLTSSTLA Q	11
SEQ ID NO: 252	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 252	
AQLTTTHSQA Q	11
SEQ ID NO: 253	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 253	
AQLVIMGMSA Q	11
SEQ ID NO: 254	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 254	
AQLVSSESRA Q	11
SEQ ID NO: 255	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 255	
AQLVTAGTAA Q	11
SEQ ID NO: 256	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 256
AQMDTHNLVA Q                                         11

SEQ ID NO: 257          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 257
AQMDYSTSPA Q                                         11

SEQ ID NO: 258          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 258
AQMGSSGQMA Q                                         11

SEQ ID NO: 259          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 259
AQMGTAHTIA Q                                         11

SEQ ID NO: 260          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 260
AQMGTHVVTA Q                                         11

SEQ ID NO: 261          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 261
AQMHDGRLVA Q                                         11

SEQ ID NO: 262          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 262
AQMLAKTATA Q                                         11

SEQ ID NO: 263          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 263
AQMLSSTMRA Q                                         11

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SEQ ID NO: 264      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 264
AQMLSTTSGA Q                               11

SEQ ID NO: 265      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 265
AQMLVHKAGA Q                               11

SEQ ID NO: 266      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 266
AQMMSSSTNAQ Q                               11

SEQ ID NO: 267      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 267
AQMNHNQQHA Q                               11

SEQ ID NO: 268      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 268
AQMNHTSNKA Q                               11

SEQ ID NO: 269      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 269
AQMNNKSPGA Q                               11

SEQ ID NO: 270      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 270
AQMNNSTRPA Q                               11

SEQ ID NO: 271      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein

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-continued

SEQUENCE: 271	organism = synthetic construct
AQMNSSSHSA Q	11
SEQ ID NO: 272	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 272	11
AQMSGNSMAA Q	
SEQ ID NO: 273	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 273	11
AQMSTSYSSA Q	
SEQ ID NO: 274	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 274	11
AQMYLFNNSA Q	
SEQ ID NO: 275	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 275	11
AQNAGYSAAA Q	
SEQ ID NO: 276	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 276	11
AQNANHMPA Q	
SEQ ID NO: 277	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 277	11
AQNAQGTHVA Q	
SEQ ID NO: 278	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 278	11
AQNASEKSSA Q	
SEQ ID NO: 279	moltype = AA length = 11
FEATURE	Location/Qualifiers

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REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 279	
AQNASNSTTA Q	11
SEQ ID NO: 280	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 280	
AQNGLRADTA Q	11
SEQ ID NO: 281	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 281	
AQNNGRTGTGA Q	11
SEQ ID NO: 282	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 282	
AQNNGRTTTVA Q	11
SEQ ID NO: 283	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 283	
AQNGSITGTAA Q	11
SEQ ID NO: 284	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 284	
AQNGSRGAAA Q	11
SEQ ID NO: 285	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 285	
AQNHEQYQWA Q	11
SEQ ID NO: 286	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 286	

-continued

AQNHSGETSA Q	11
SEQ ID NO: 287 FEATURE REGION source SEQUENCE: 287	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
AQNHTGVSPA Q	11
SEQ ID NO: 288 FEATURE REGION source SEQUENCE: 288	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
AQNHVGGATA Q	11
SEQ ID NO: 289 FEATURE REGION source SEQUENCE: 289	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
AQNIQSLSTA Q	11
SEQ ID NO: 290 FEATURE REGION source SEQUENCE: 290	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
AQNLGLISVA Q	11
SEQ ID NO: 291 FEATURE REGION source SEQUENCE: 291	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
AQNLSLTHEA Q	11
SEQ ID NO: 292 FEATURE REGION source SEQUENCE: 292	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
AQMSSSNKDA Q	11
SEQ ID NO: 293 FEATURE REGION source SEQUENCE: 293	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
AQMNTSMQSA Q	11
SEQ ID NO: 294 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 294
AQNPTRSLSA Q                                         11

SEQ ID NO: 295          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 295
AQNCQSHVA Q                                         11

SEQ ID NO: 296          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 296
AQNQFTATEA Q                                         11

SEQ ID NO: 297          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 297
AQNQLGNSAA Q                                         11

SEQ ID NO: 298          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 298
AQNQQNKANA Q                                         11

SEQ ID NO: 299          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 299
AQNRNEVHSA Q                                         11

SEQ ID NO: 300          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 300
AQNRSDSAMA Q                                         11

SEQ ID NO: 301          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 301
AQNSAFTAQA Q                                         11

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SEQ ID NO: 302	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 302	
AQNSFSPATA Q	11
SEQ ID NO: 303	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 303	
AQNSGNYQIA Q	11
SEQ ID NO: 304	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 304	
AQNSHGHALA Q	11
SEQ ID NO: 305	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 305	
AQNSPGYTAQ	11
SEQ ID NO: 306	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 306	
AQNSSAATGA Q	11
SEQ ID NO: 307	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 307	
AQNSSGHGVA Q	11
SEQ ID NO: 308	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 308	
AQNSSSGSAA Q	11
SEQ ID NO: 309	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein

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SEQUENCE: 309 AQNSSSSPGQ Q	organism = synthetic construct 11
SEQ ID NO: 310 FEATURE REGION source	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQUENCE: 310 AQNSTSISHA Q	 11
SEQ ID NO: 311 FEATURE REGION source	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQUENCE: 311 AQNTLSNISA Q	 11
SEQ ID NO: 312 FEATURE REGION source	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQUENCE: 312 AQNTQTHSSA Q	 11
SEQ ID NO: 313 FEATURE REGION source	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQUENCE: 313 AQNTTQPSNA Q	 11
SEQ ID NO: 314 FEATURE REGION source	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQUENCE: 314 AQNVMSGAA Q	 11
SEQ ID NO: 315 FEATURE REGION source	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQUENCE: 315 AQNVQSSNLA Q	 11
SEQ ID NO: 316 FEATURE REGION source	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQUENCE: 316 AQNYCGKECA Q	 11
SEQ ID NO: 317 FEATURE	moltype = AA length = 11 Location/Qualifiers

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REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 317	
AQPATGTSGA Q	11
SEQ ID NO: 318	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 318	
AQPAVGSAGA Q	11
SEQ ID NO: 319	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 319	
AQPIGGSNMA Q	11
SEQ ID NO: 320	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 320	
AQPIHQTGVA Q	11
SEQ ID NO: 321	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 321	
AQPLQTSNAA Q	11
SEQ ID NO: 322	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 322	
AQPLTGQTNA Q	11
SEQ ID NO: 323	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 323	
AQPLYNQTPA Q	11
SEQ ID NO: 324	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 324	

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AQPPKPPSIA Q	11
SEQ ID NO: 325 FEATURE REGION source SEQUENCE: 325 AQPQPHRLLA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 326 FEATURE REGION source SEQUENCE: 326 AQPQRSQHIA Q	11
SEQ ID NO: 327 FEATURE REGION source SEQUENCE: 327 AQPQSNVSTA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 328 FEATURE REGION source SEQUENCE: 328 AQPSAEQAQA Q	11
SEQ ID NO: 329 FEATURE REGION source SEQUENCE: 329 AQPSGAYGEA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 330 FEATURE REGION source SEQUENCE: 330 AQPSGQKIDA Q	11
SEQ ID NO: 331 FEATURE REGION source SEQUENCE: 331 AQPSGSHSIA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 332 FEATURE REGION	11
	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 332
AQPSGTNIGA Q                                         11

SEQ ID NO: 333          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 333
AQPSNALAGA Q                                         11

SEQ ID NO: 334          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 334
AQPSNPQSYA Q                                         11

SEQ ID NO: 335          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 335
AQPSPSTMRA Q                                         11

SEQ ID NO: 336          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 336
AQPSRDVTPA Q                                         11

SEQ ID NO: 337          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 337
AQPSSYSDSA Q                                         11

SEQ ID NO: 338          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 338
AQPVAAHVRA Q                                         11

SEQ ID NO: 339          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 339
AQPVHGSTDQ Q                                         11

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SEQ ID NO: 340	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 340	
AQQAAAVSGGA Q	11
SEQ ID NO: 341	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 341	
AQQATHVALA Q	11
SEQ ID NO: 342	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 342	
AQQDSTKALA Q	11
SEQ ID NO: 343	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 343	
AQQIHGPMQA Q	11
SEQ ID NO: 344	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 344	
AQQLLVSVTA Q	11
SEQ ID NO: 345	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 345	
AQQLSGSLMA Q	11
SEQ ID NO: 346	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 346	
AQQLSHEKSA Q	11
SEQ ID NO: 347	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein

-continued

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SEQUENCE: 347          organism = synthetic construct
AQQNNTTHGGA Q           11

SEQ ID NO: 348          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 348          organism = synthetic construct
AQQNSGPLHA Q           11

SEQ ID NO: 349          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 349          organism = synthetic construct
AQQRRTDQQTA Q           11

SEQ ID NO: 350          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 350          organism = synthetic construct
AQQVAHTQIA Q           11

SEQ ID NO: 351          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 351          organism = synthetic construct
AQQVGKSSAA Q           11

SEQ ID NO: 352          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 352          organism = synthetic construct
AQQVISTGSA Q           11

SEQ ID NO: 353          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 353          organism = synthetic construct
AQQVRTNTSA Q           11

SEQ ID NO: 354          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 354          organism = synthetic construct
AQRADRVQEAE Q          11

SEQ ID NO: 355          moltype = AA length = 11
FEATURE          Location/Qualifiers

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-continued

REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 355	
AQRDKMVFMA Q	11
SEQ ID NO: 356	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 356	
AQRDSVTDSA Q	11
SEQ ID NO: 357	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 357	
AQRESRVSQA Q	11
SEQ ID NO: 358	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 358	
AQRGHGQEIA Q	11
SEQ ID NO: 359	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 359	
AQRGLSAVNA Q	11
SEQ ID NO: 360	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 360	
AQRIGSSAIA Q	11
SEQ ID NO: 361	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 361	
AQRISSETSA Q	11
SEQ ID NO: 362	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 362	

-continued

AQRLDIHMCA Q	11
SEQ ID NO: 363	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 363	
AQRNTSNQEA Q	11
SEQ ID NO: 364	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 364	
AQRSNNCIGA Q	11
SEQ ID NO: 365	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 365	
AQRSNVDGLA Q	11
SEQ ID NO: 366	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 366	
AQRSSLHTSA Q	11
SEQ ID NO: 367	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 367	
AQRSTESLHA Q	11
SEQ ID NO: 368	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 368	
AQRTAAANHEA Q	11
SEQ ID NO: 369	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 369	
AQRTDGTSIA Q	11
SEQ ID NO: 370	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
	note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 370
AQRTHSAMPA Q                                         11

SEQ ID NO: 371      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 371
AQRTSGPAAA Q                                         11

SEQ ID NO: 372      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 372
AQSQAPNRTDA Q                                         11

SEQ ID NO: 373      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 373
AQSAQSAIQA Q                                         11

SEQ ID NO: 374      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 374
AQQSARGMSGAA Q                                         11

SEQ ID NO: 375      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 375
AQQSASRDPAQ Q                                         11

SEQ ID NO: 376      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 376
AQSDHNSVRDA Q                                         11

SEQ ID NO: 377      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 377
AQSDKNLQQA Q                                         11

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-continued

SEQ ID NO: 378	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 378	
AQSDLICCPA Q	11
SEQ ID NO: 379	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 379	
AQSERSYPSA Q	11
SEQ ID NO: 380	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 380	
AQSFSGQSLA Q	11
SEQ ID NO: 381	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 381	
AQSFSNVSPA Q	11
SEQ ID NO: 382	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 382	
AQGLNLTLAA Q	11
SEQ ID NO: 383	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 383	
AQSGNHNPAA Q	11
SEQ ID NO: 384	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 384	
AQSGPVQNQA Q	11
SEQ ID NO: 385	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein

-continued

SEQUENCE: 385 AQSGSSHERA Q	organism = synthetic construct	
		11
SEQ ID NO: 386 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein	
SEQUENCE: 386 AQSGSVMSSA Q	organism = synthetic construct	
		11
SEQ ID NO: 387 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein	
SEQUENCE: 387 AQSHIVSSSA Q	organism = synthetic construct	
		11
SEQ ID NO: 388 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein	
SEQUENCE: 388 AQSHLSSQVA Q	organism = synthetic construct	
		11
SEQ ID NO: 389 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein	
SEQUENCE: 389 AQSHNSAFEA Q	organism = synthetic construct	
		11
SEQ ID NO: 390 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein	
SEQUENCE: 390 AQSIARDLAA Q	organism = synthetic construct	
		11
SEQ ID NO: 391 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein	
SEQUENCE: 391 AQSIGSSYPA Q	organism = synthetic construct	
		11
SEQ ID NO: 392 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein	
SEQUENCE: 392 AQSIKQNEGA Q	organism = synthetic construct	
		11
SEQ ID NO: 393 FEATURE	moltype = AA length = 11 Location/Qualifiers	

-continued

REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 393	
AQSITQGSAA Q	11
SEQ ID NO: 394	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 394	
AQSKNDTSMA Q	11
SEQ ID NO: 395	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 395	
AQSLAGTLSA Q	11
SEQ ID NO: 396	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 396	
AQSLANSQTA Q	11
SEQ ID NO: 397	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 397	
AQSLGAGLFA Q	11
SEQ ID NO: 398	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 398	
AQSLHLSSSA Q	11
SEQ ID NO: 399	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 399	
AQSLSHTRPA Q	11
SEQ ID NO: 400	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 400	

-continued

AQSLSQTVGA Q	11
SEQ ID NO: 401	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 401	
AQSLSSSTGGA Q	11
SEQ ID NO: 402	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 402	
AQSLVSLKEA Q	11
SEQ ID NO: 403	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 403	
AQSLVVTTPA Q	11
SEQ ID NO: 404	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 404	
AQSMGSSNWA Q	11
SEQ ID NO: 405	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 405	
AQSMISSNRA Q	11
SEQ ID NO: 406	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 406	
AQSMMSLDQA Q	11
SEQ ID NO: 407	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 407	
AQ SMPQPLVA Q	11
SEQ ID NO: 408	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 408
AQSMSSNLTA Q                                         11

SEQ ID NO: 409          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 409
AQSMTLSNYA Q                                         11

SEQ ID NO: 410          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 410
AQSNAUTHRFA Q                                         11

SEQ ID NO: 411          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 411
AQSNAHTKPIA Q                                         11

SEQ ID NO: 412          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 412
AQSNNQTRHVA Q                                         11

SEQ ID NO: 413          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 413
AQSPKPSTA Q                                         11

SEQ ID NO: 414          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 414
AQSQDTASKA Q                                         11

SEQ ID NO: 415          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 415
AQSQIAEPAA Q                                         11

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SEQ ID NO: 416	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 416	
AQSQKAPDIA Q	11
SEQ ID NO: 417	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 417	
AQSQLSPSNA Q	11
SEQ ID NO: 418	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 418	
AQSQMSSAGA Q	11
SEQ ID NO: 419	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 419	
AQSQSSSQTA Q	11
SEQ ID NO: 420	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 420	
AQSRESPSTA Q	11
SEQ ID NO: 421	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 421	
AQSRLLLESSA Q	11
SEQ ID NO: 422	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 422	
AQSRNQPAEA Q	11
SEQ ID NO: 423	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein

-continued

SEQUENCE: 423 AQSRSSDAFA Q	organism = synthetic construct	
		11
SEQ ID NO: 424 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein organism = synthetic construct	
SEQUENCE: 424 AQSRTDLLSA Q		11
SEQ ID NO: 425 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein organism = synthetic construct	
SEQUENCE: 425 AQSRTSNQAA Q		11
SEQ ID NO: 426 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein organism = synthetic construct	
SEQUENCE: 426 AQSRVVEEMNA Q		11
SEQ ID NO: 427 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein organism = synthetic construct	
SEQUENCE: 427 AQSRVNTLDA Q		11
SEQ ID NO: 428 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein organism = synthetic construct	
SEQUENCE: 428 AQSSAVLLNA Q		11
SEQ ID NO: 429 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein organism = synthetic construct	
SEQUENCE: 429 AQSSDRVSSA Q		11
SEQ ID NO: 430 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein organism = synthetic construct	
SEQUENCE: 430 AQSSGHSSEA Q		11
SEQ ID NO: 431 FEATURE	moltype = AA length = 11 Location/Qualifiers	

-continued

REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 431	
AQSSGLRLGA Q	11
SEQ ID NO: 432	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 432	
AQSSGSREVA Q	11
SEQ ID NO: 433	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 433	
AQSSHDTLQA Q	11
SEQ ID NO: 434	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 434	
AQSSLSDLWA Q	11
SEQ ID NO: 435	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 435	
AQSSLSSVVPQ Q	11
SEQ ID NO: 436	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 436	
AQSSMWHKDA Q	11
SEQ ID NO: 437	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 437	
AQSSQSFGYA Q	11
SEQ ID NO: 438	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 438	

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AQSSREVVTA Q	11
SEQ ID NO: 439	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 439	
AQSSRGETPA Q	11
SEQ ID NO: 440	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 440	
AQSSSQSSDA Q	11
SEQ ID NO: 441	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 441	
AQSSTQHEKA Q	11
SEQ ID NO: 442	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 442	
AQSSVSRRTSA Q	11
SEQ ID NO: 443	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 443	
AQSSYGYRSA Q	11
SEQ ID NO: 444	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 444	
AQSTATTTGA Q	11
SEQ ID NO: 445	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 445	
AQSTATSPAA Q	11
SEQ ID NO: 446	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 446
AQSTGQGFTA Q                                         11

SEQ ID NO: 447          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 447
AQSTGQGINA Q                                         11

SEQ ID NO: 448          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 448
AQSTGTSGQA Q                                         11

SEQ ID NO: 449          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 449
AQSTISTGSA Q                                         11

SEQ ID NO: 450          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 450
AQSTKQNVNA Q                                         11

SEQ ID NO: 451          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 451
AQSTMAGSA Q                                         11

SEQ ID NO: 452          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 452
AQSTMGALKA Q                                         11

SEQ ID NO: 453          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 453
AQSTNRAEQA Q                                         11

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SEQ ID NO: 454	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 454	
AQSTSALGPA Q	11
SEQ ID NO: 455	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 455	
AQSTSDYSRA Q	11
SEQ ID NO: 456	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 456	
AQSTSPTYVA Q	11
SEQ ID NO: 457	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 457	
AQSTSSITVA Q	11
SEQ ID NO: 458	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 458	
AQSTSSPTSA Q	11
SEQ ID NO: 459	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 459	
AQSTSAYASIA Q	11
SEQ ID NO: 460	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 460	
AQSTTRVVDA Q	11
SEQ ID NO: 461	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein

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SEQUENCE: 461	organism = synthetic construct	
AQSVAPIANA Q		11
SEQ ID NO: 462	moltype = AA length = 11	
FEATURE	Location/Qualifiers	
REGION	1..11	
source	note = Synthetic	
	1..11	
	mol_type = protein	
	organism = synthetic construct	
SEQUENCE: 462		
AQSVGNGNIA Q		11
SEQ ID NO: 463	moltype = AA length = 11	
FEATURE	Location/Qualifiers	
REGION	1..11	
source	note = Synthetic	
	1..11	
	mol_type = protein	
	organism = synthetic construct	
SEQUENCE: 463		
AQSVRSGFKA Q		11
SEQ ID NO: 464	moltype = AA length = 11	
FEATURE	Location/Qualifiers	
REGION	1..11	
source	note = Synthetic	
	1..11	
	mol_type = protein	
	organism = synthetic construct	
SEQUENCE: 464		
AQSVSDGGFA Q		11
SEQ ID NO: 465	moltype = AA length = 11	
FEATURE	Location/Qualifiers	
REGION	1..11	
source	note = Synthetic	
	1..11	
	mol_type = protein	
	organism = synthetic construct	
SEQUENCE: 465		
AQSVSSNIVA Q		11
SEQ ID NO: 466	moltype = AA length = 11	
FEATURE	Location/Qualifiers	
REGION	1..11	
source	note = Synthetic	
	1..11	
	mol_type = protein	
	organism = synthetic construct	
SEQUENCE: 466		
AQSVSTAQA Q		11
SEQ ID NO: 467	moltype = AA length = 11	
FEATURE	Location/Qualifiers	
REGION	1..11	
source	note = Synthetic	
	1..11	
	mol_type = protein	
	organism = synthetic construct	
SEQUENCE: 467		
AQTAHNVEQA Q		11
SEQ ID NO: 468	moltype = AA length = 11	
FEATURE	Location/Qualifiers	
REGION	1..11	
source	note = Synthetic	
	1..11	
	mol_type = protein	
	organism = synthetic construct	
SEQUENCE: 468		
AQTAPQSMDA Q		11
SEQ ID NO: 469	moltype = AA length = 11	
FEATURE	Location/Qualifiers	

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REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 469	
AQTDRGQVQA Q	11
SEQ ID NO: 470	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 470	
AQTDSSRESA Q	11
SEQ ID NO: 471	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 471	
AQTEAGSAAA Q	11
SEQ ID NO: 472	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 472	
AQTEQRHAPA Q	11
SEQ ID NO: 473	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 473	
AQTFGKASDA Q	11
SEQ ID NO: 474	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 474	
AQTGAASNIA Q	11
SEQ ID NO: 475	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 475	
AQTGLSAEGA Q	11
SEQ ID NO: 476	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 476	

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AQTGTVHSTA Q	11
SEQ ID NO: 477	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 477	
AQTHMQVGAA Q	11
SEQ ID NO: 478	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 478	
AQTHQPAEKA Q	11
SEQ ID NO: 479	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 479	
AQTHTALPDA Q	11
SEQ ID NO: 480	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 480	
AQTHTRSMIA Q	11
SEQ ID NO: 481	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 481	
AQTINNVVAA Q	11
SEQ ID NO: 482	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 482	
AQTKHSTTEA Q	11
SEQ ID NO: 483	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 483	
AQTLAGSSIA Q	11
SEQ ID NO: 484	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 484
AQTLRTSDLQ Q                                         11

SEQ ID NO: 485          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 485
AQTLSGLVMA Q                                         11

SEQ ID NO: 486          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 486
AQTLSTHVVA Q                                         11

SEQ ID NO: 487          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 487
AQTNITRAQA Q                                         11

SEQ ID NO: 488          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 488
AQTNSTRNLA Q                                         11

SEQ ID NO: 489          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 489
AQTNSTRNVA Q                                         11

SEQ ID NO: 490          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 490
AQTNTHSVTA Q                                         11

SEQ ID NO: 491          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 491
AQTNLHTAA Q                                         11

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SEQ ID NO: 492	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 492	
AQTNTRTMQA Q	11
SEQ ID NO: 493	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 493	
AQTNVSSEIA Q	11
SEQ ID NO: 494	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 494	
AQTPTSSSSA Q	11
SEQ ID NO: 495	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 495	
AQTQASASGA Q	11
SEQ ID NO: 496	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 496	
AQTQGDGRGA Q	11
SEQ ID NO: 497	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 497	
AQTQSKSESA Q	11
SEQ ID NO: 498	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 498	
AQTQTHVTSA Q	11
SEQ ID NO: 499	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein

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SEQUENCE: 499 AQTQTVPTNA Q	organism = synthetic construct 11
SEQ ID NO: 500 FEATURE REGION source	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQUENCE: 500 AQTRTDNSGA Q	 11
SEQ ID NO: 501 FEATURE REGION source	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQUENCE: 501 AQTSAHANQA Q	 11
SEQ ID NO: 502 FEATURE REGION source	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQUENCE: 502 AQTSGHSSSTA Q	 11
SEQ ID NO: 503 FEATURE REGION source	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQUENCE: 503 AQTSLKIVPA Q	 11
SEQ ID NO: 504 FEATURE REGION source	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQUENCE: 504 AQTSLTVNIA Q	 11
SEQ ID NO: 505 FEATURE REGION source	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQUENCE: 505 AQTSSHSKDA Q	 11
SEQ ID NO: 506 FEATURE REGION source	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQUENCE: 506 AQTSSNYVSA Q	 11
SEQ ID NO: 507 FEATURE	moltype = AA length = 11 Location/Qualifiers

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REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 507	
AQTSSSTGVQA Q	11
SEQ ID NO: 508	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 508	
AQTSTHTRDA Q	11
SEQ ID NO: 509	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 509	
AQTSVAGSNA Q	11
SEQ ID NO: 510	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 510	
AQTSVTYQDA Q	11
SEQ ID NO: 511	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 511	
AQTTGGQITVA Q	11
SEQ ID NO: 512	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 512	
AQTTSQALYA Q	11
SEQ ID NO: 513	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 513	
AQTTSSSVNA Q	11
SEQ ID NO: 514	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 514	

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AQTTSTMSTA Q	11
SEQ ID NO: 515	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 515	
AQTTTSPAIA Q	11
SEQ ID NO: 516	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 516	
AQTVGRAMEA Q	11
SEQ ID NO: 517	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 517	
AQTVGVLAQ Q	11
SEQ ID NO: 518	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 518	
AQTVRASTDA Q	11
SEQ ID NO: 519	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 519	
AQTVVSGTGA Q	11
SEQ ID NO: 520	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 520	
AQVANDSFKA Q	11
SEQ ID NO: 521	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 521	
AQVARGDSDA Q	11
SEQ ID NO: 522	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 522
AQVASGVATA Q                                         11

SEQ ID NO: 523      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 523
AQVASRDQFA Q                                         11

SEQ ID NO: 524      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 524
AQVATRPDAA Q                                         11

SEQ ID NO: 525      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 525
AQVCHLRTSA Q                                         11

SEQ ID NO: 526      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 526
AQVDNVTRSA Q                                         11

SEQ ID NO: 527      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 527
AQVDSRSTPA Q                                         11

SEQ ID NO: 528      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 528
AQVEPIRICA Q                                         11

SEQ ID NO: 529      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 529
AQVERLQSGA Q                                         11

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SEQ ID NO: 530	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 530	
AQVFGAHSFA Q	11
SEQ ID NO: 531	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 531	
AQVGASSSTA Q	11
SEQ ID NO: 532	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 532	
AQVGGGANLAA Q	11
SEQ ID NO: 533	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 533	
AQVGNAPPHA Q	11
SEQ ID NO: 534	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 534	
AQVGSNVGQA Q	11
SEQ ID NO: 535	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 535	
AQVGSSSVSA Q	11
SEQ ID NO: 536	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 536	
AQVGTVSNSA Q	11
SEQ ID NO: 537	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein

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SEQUENCE: 537	organism = synthetic construct
AQVGVNRTNA Q	11
SEQ ID NO: 538	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 538	
AQVHLQAHNA Q	11
SEQ ID NO: 539	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 539	
AQVHSLPSVA Q	11
SEQ ID NO: 540	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 540	
AQVHTKYTDA Q	11
SEQ ID NO: 541	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 541	
AQVIAATAEA Q	11
SEQ ID NO: 542	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 542	
AQVIWQNQVA Q	11
SEQ ID NO: 543	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 543	
AQVKSGSMAA Q	11
SEQ ID NO: 544	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 544	
AQVLSGQQSPA Q	11
SEQ ID NO: 545	moltype = AA length = 11
FEATURE	Location/Qualifiers

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REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 545	
AQVLSSMSLA Q	11
SEQ ID NO: 546	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 546	
AQVLTSSDLA Q	11
SEQ ID NO: 547	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 547	
AQVNHHGAITA Q	11
SEQ ID NO: 548	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 548	
AQVNNSHLTG A Q	11
SEQ ID NO: 549	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 549	
AQVNTHHTSSA Q	11
SEQ ID NO: 550	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 550	
AQVNVTRSNA Q	11
SEQ ID NO: 551	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 551	
AQVPGGAGFA Q	11
SEQ ID NO: 552	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 552	

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AQPSSNVSA Q	11
SEQ ID NO: 553 FEATURE REGION source SEQUENCE: 553 AQVQLVANVA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 554 FEATURE REGION source SEQUENCE: 554 AQVQSHGVYA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 555 FEATURE REGION source SEQUENCE: 555 AQVRSGSNIA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 556 FEATURE REGION source SEQUENCE: 556 AQVRTAAQPA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 557 FEATURE REGION source SEQUENCE: 557 AQVSGHEHYA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 558 FEATURE REGION source SEQUENCE: 558 AQVSIHLTQA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 559 FEATURE REGION source SEQUENCE: 559 AQVSNSMATA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 560 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 560
AQVSNTLLGA Q                                         11

SEQ ID NO: 561      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 561
AQVSSFQSSA Q                                         11

SEQ ID NO: 562      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 562
AQVSSLPPSA Q                                         11

SEQ ID NO: 563      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 563
AQVSTANTSA Q                                         11

SEQ ID NO: 564      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 564
AQVSTSSLTA Q                                         11

SEQ ID NO: 565      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 565
AQVSVSSTAA Q                                         11

SEQ ID NO: 566      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 566
AQVTGSTKLA Q                                         11

SEQ ID NO: 567      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 567
AQVTSQIMDA Q                                         11

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SEQ ID NO: 568	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 568	
AQVTSVSYSA Q	11
SEQ ID NO: 569	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 569	
AQVVSGSSHA Q	11
SEQ ID NO: 570	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 570	
AQVVTDAYRA Q	11
SEQ ID NO: 571	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 571	
AQWINAFKAA Q	11
SEQ ID NO: 572	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 572	
AQWSQSNKAA Q	11
SEQ ID NO: 573	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 573	
AQWSSRLNSA Q	11
SEQ ID NO: 574	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 574	
AQYAHQYNAA Q	11
SEQ ID NO: 575	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein

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SEQUENCE: 575 AQYDMYYDKA Q	organism = synthetic construct	
		11
SEQ ID NO: 576 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein organism = synthetic construct	
SEQUENCE: 576 AQYERSKVDA Q		11
SEQ ID NO: 577 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein organism = synthetic construct	
SEQUENCE: 577 AQYGTMIQVA Q		11
SEQ ID NO: 578 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein organism = synthetic construct	
SEQUENCE: 578 AQYHSGVGAE Q		11
SEQ ID NO: 579 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein organism = synthetic construct	
SEQUENCE: 579 AQYKATHIAA Q		11
SEQ ID NO: 580 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein organism = synthetic construct	
SEQUENCE: 580 AQYKTGNHEA Q		11
SEQ ID NO: 581 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein organism = synthetic construct	
SEQUENCE: 581 AQYLSNLMMMA Q		11
SEQ ID NO: 582 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein organism = synthetic construct	
SEQUENCE: 582 AQYNNGHSNNA Q		11
SEQ ID NO: 583 FEATURE	moltype = AA length = 11 Location/Qualifiers	

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REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 583	
AQYNGQSSMA Q	11
SEQ ID NO: 584	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 584	
AQYNHTRLA Q	11
SEQ ID NO: 585	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 585	
AQYNSTRASA Q	11
SEQ ID NO: 586	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 586	
AQYPSSSSMA Q	11
SEQ ID NO: 587	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 587	
AQYQHSSLTA Q	11
SEQ ID NO: 588	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 588	
AQYQLVPRSA Q	11
SEQ ID NO: 589	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 589	
AQYQTTSISPA Q	11
SEQ ID NO: 590	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 590	

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AQYQTSTQGA Q	11
SEQ ID NO: 591	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 591	
AQYSGTHTAA Q	11
SEQ ID NO: 592	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 592	
AQYSSGHANA Q	11
SEQ ID NO: 593	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 593	
AQYSSGLAGA Q	11
SEQ ID NO: 594	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 594	
AQYVNHGLGA Q	11
SEQ ID NO: 595	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 595	
AQAAGVSAGA Q	11
SEQ ID NO: 596	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 596	
AQAGHNMGGA Q	11
SEQ ID NO: 597	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 597	
AQANKVKDLA Q	11
SEQ ID NO: 598	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 598
AQANLTRVTA Q                                         11

SEQ ID NO: 599      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 599
AQANNTMKQA Q                                         11

SEQ ID NO: 600      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 600
AQANQTRPFA Q                                         11

SEQ ID NO: 601      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 601
AQANSVKNIA Q                                         11

SEQ ID NO: 602      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 602
AQANTTKSSA Q                                         11

SEQ ID NO: 603      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 603
AQANTTRQTA Q                                         11

SEQ ID NO: 604      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 604
AQANTVRNTA Q                                         11

SEQ ID NO: 605      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 605
AQARAAPQTA Q                                         11

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SEQ ID NO: 606	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
SEQUENCE: 606	organism = synthetic construct
AQASAGSSGA Q	11
SEQ ID NO: 607	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
SEQUENCE: 607	organism = synthetic construct
AQASNHTSGA Q	11
SEQ ID NO: 608	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
SEQUENCE: 608	organism = synthetic construct
AQASRSEIGA Q	11
SEQ ID NO: 609	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
SEQUENCE: 609	organism = synthetic construct
AQASSSAREA Q	11
SEQ ID NO: 610	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
SEQUENCE: 610	organism = synthetic construct
AQATGYSGAA Q	11
SEQ ID NO: 611	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
SEQUENCE: 611	organism = synthetic construct
AQATHSREQA Q	11
SEQ ID NO: 612	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
SEQUENCE: 612	organism = synthetic construct
AQATNSAVGA Q	11
SEQ ID NO: 613	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein

-continued

SEQUENCE: 613	organism = synthetic construct	
AQDARPSPNA Q		11
SEQ ID NO: 614	moltype = AA length = 11	
FEATURE	Location/Qualifiers	
REGION	1..11	
source	note = Synthetic	
	1..11	
	mol_type = protein	
	organism = synthetic construct	
SEQUENCE: 614		
AQDNHVRTVA Q		11
SEQ ID NO: 615	moltype = AA length = 11	
FEATURE	Location/Qualifiers	
REGION	1..11	
source	note = Synthetic	
	1..11	
	mol_type = protein	
	organism = synthetic construct	
SEQUENCE: 615		
AQDNKVKTFQ Q		11
SEQ ID NO: 616	moltype = AA length = 11	
FEATURE	Location/Qualifiers	
REGION	1..11	
source	note = Synthetic	
	1..11	
	mol_type = protein	
	organism = synthetic construct	
SEQUENCE: 616		
AQDNMIRSIQ Q		11
SEQ ID NO: 617	moltype = AA length = 11	
FEATURE	Location/Qualifiers	
REGION	1..11	
source	note = Synthetic	
	1..11	
	mol_type = protein	
	organism = synthetic construct	
SEQUENCE: 617		
AQDNSTRISA Q		11
SEQ ID NO: 618	moltype = AA length = 11	
FEATURE	Location/Qualifiers	
REGION	1..11	
source	note = Synthetic	
	1..11	
	mol_type = protein	
	organism = synthetic construct	
SEQUENCE: 618		
AQDNSVKHSA Q		11
SEQ ID NO: 619	moltype = AA length = 11	
FEATURE	Location/Qualifiers	
REGION	1..11	
source	note = Synthetic	
	1..11	
	mol_type = protein	
	organism = synthetic construct	
SEQUENCE: 619		
AQDNSVRLTA Q		11
SEQ ID NO: 620	moltype = AA length = 11	
FEATURE	Location/Qualifiers	
REGION	1..11	
source	note = Synthetic	
	1..11	
	mol_type = protein	
	organism = synthetic construct	
SEQUENCE: 620		
AQDNSVRPSA Q		11
SEQ ID NO: 621	moltype = AA length = 11	
FEATURE	Location/Qualifiers	

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REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 621	
AQDNSVRSPA Q	11
SEQ ID NO: 622	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 622	
AQDNVIRSIA Q	11
SEQ ID NO: 623	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 623	
AQDRAQSHSA Q	11
SEQ ID NO: 624	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 624	
AQDRSQSHSA Q	11
SEQ ID NO: 625	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 625	
AQDTSHRASA Q	11
SEQ ID NO: 626	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 626	
AQEGGTGKVA Q	11
SEQ ID NO: 627	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 627	
AQENHVRSSA Q	11
SEQ ID NO: 628	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 628	

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AQENKIKTNA Q	11
SEQ ID NO: 629	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 629	
AQENNTRMVA Q	11
SEQ ID NO: 630	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 630	
AQENQVRNTA Q	11
SEQ ID NO: 631	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 631	
AQENRIINHA Q	11
SEQ ID NO: 632	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 632	
AQENSTKSMA Q	11
SEQ ID NO: 633	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 633	
AQENSTRVQA Q	11
SEQ ID NO: 634	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 634	
AQENTTKHLA Q	11
SEQ ID NO: 635	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 635	
AQENTTKSLA Q	11
SEQ ID NO: 636	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
	note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 636
AQENTVRNMA Q                                         11

SEQ ID NO: 637      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 637
AQETAVRSSA Q                                         11

SEQ ID NO: 638      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 638
AQETHNRAGA Q                                         11

SEQ ID NO: 639      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 639
AQEVVRGGTMA Q                                         11

SEQ ID NO: 640      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 640
AQFNSTKVVA Q                                         11

SEQ ID NO: 641      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 641
AQFNSTRSVA Q                                         11

SEQ ID NO: 642      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 642
AQFNSVRPVA Q                                         11

SEQ ID NO: 643      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 643
AQGGAPPTNA Q                                         11

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SEQ ID NO: 644	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 644	
AQGNAIRNGA Q	11
SEQ ID NO: 645	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 645	
AQGNAVKPFA Q	11
SEQ ID NO: 646	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 646	
AQGNGTRGFA Q	11
SEQ ID NO: 647	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 647	
AQGNGTRPTA Q	11
SEQ ID NO: 648	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 648	
AQGNITKVFA Q	11
SEQ ID NO: 649	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 649	
AQGNNSKPAA Q	11
SEQ ID NO: 650	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 650	
AQGNNTKQMA Q	11
SEQ ID NO: 651	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein

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SEQUENCE: 651	organism = synthetic construct
AQGNNTRLTA Q	11
SEQ ID NO: 652	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 652	
AQGNQLKNTA Q	11
SEQ ID NO: 653	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 653	
AQGNRIAQVA Q	11
SEQ ID NO: 654	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 654	
AQGNRKPNEA Q	11
SEQ ID NO: 655	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 655	
AQGNRTQPSA Q	11
SEQ ID NO: 656	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 656	
AQGNRTSGGA Q	11
SEQ ID NO: 657	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 657	
AQGNRVQNVA Q	11
SEQ ID NO: 658	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 658	
AQGNSIINHA Q	11
SEQ ID NO: 659	moltype = AA length = 11
FEATURE	Location/Qualifiers

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REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 659	
AQGNSSKNLA Q	11
SEQ ID NO: 660	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 660	
AQGNSVKDSA Q	11
SEQ ID NO: 661	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 661	
AQGNSVKGTA Q	11
SEQ ID NO: 662	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 662	
AQGNSVRISA Q	11
SEQ ID NO: 663	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 663	
AQGNSVRTVA Q	11
SEQ ID NO: 664	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 664	
AQGNTIKDYA Q	11
SEQ ID NO: 665	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 665	
AQGNTTRHPA Q	11
SEQ ID NO: 666	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 666	

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AQGNTTRVPA Q	11
SEQ ID NO: 667 FEATURE REGION source SEQUENCE: 667 AQGNTVKSEA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 668 FEATURE REGION source SEQUENCE: 668 AQGRNTSMEA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 669 FEATURE REGION source SEQUENCE: 669 AQGRSSQGEA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 670 FEATURE REGION source SEQUENCE: 670 AQGSRGSGAA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 671 FEATURE REGION source SEQUENCE: 671 AQGTRSTDNA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 672 FEATURE REGION source SEQUENCE: 672 AQGTSSNTGA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 673 FEATURE REGION source SEQUENCE: 673 AQGVASSHQA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 674 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 674
AQHGSSTLGA Q                                         11

SEQ ID NO: 675      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 675
AQHGSTFTGA Q                                         11

SEQ ID NO: 676      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 676
AQHIGSIPAA Q                                         11

SEQ ID NO: 677      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 677
AQHNINVRPVA Q                                         11

SEQ ID NO: 678      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 678
AQHNSTRNAQ Q                                         11

SEQ ID NO: 679      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 679
AQHNTTKPIA Q                                         11

SEQ ID NO: 680      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 680
AQHSQSSKDA Q                                         11

SEQ ID NO: 681      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 681
AQHTSSISSA Q                                         11

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SEQ ID NO: 682	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 682	
AQIAHASSMA Q	11
SEQ ID NO: 683	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 683	
AQIAHSSSGA Q	11
SEQ ID NO: 684	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 684	
AQIISSNVPA Q	11
SEQ ID NO: 685	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 685	
AQINATRNQA Q	11
SEQ ID NO: 686	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 686	
AQINHVRDTA Q	11
SEQ ID NO: 687	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 687	
AQINTTKPIA Q	11
SEQ ID NO: 688	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 688	
AQIRSTTMDA Q	11
SEQ ID NO: 689	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein

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SEQUENCE: 689 AQISAGPREA Q	organism = synthetic construct	
		11
SEQ ID NO: 690 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein organism = synthetic construct	
SEQUENCE: 690 AQLHGTSTAA Q		11
SEQ ID NO: 691 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein organism = synthetic construct	
SEQUENCE: 691 AQLNATKPIA Q		11
SEQ ID NO: 692 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein organism = synthetic construct	
SEQUENCE: 692 AQLNHTKQTA Q		11
SEQ ID NO: 693 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein organism = synthetic construct	
SEQUENCE: 693 AQLNNNTKPIA Q		11
SEQ ID NO: 694 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein organism = synthetic construct	
SEQUENCE: 694 AQLNNTRPGQ Q		11
SEQ ID NO: 695 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein organism = synthetic construct	
SEQUENCE: 695 AQLNSTARSA Q		11
SEQ ID NO: 696 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein organism = synthetic construct	
SEQUENCE: 696 AQLNSTKPIA Q		11
SEQ ID NO: 697 FEATURE	moltype = AA length = 11 Location/Qualifiers	

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REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 697	
AQLNTAKPIA Q	11
SEQ ID NO: 698	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 698	
AQLNTIKPIA Q	11
SEQ ID NO: 699	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 699	
AQLNTSKPIA Q	11
SEQ ID NO: 700	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 700	
AQLNTTKAIA Q	11
SEQ ID NO: 701	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 701	
AQLNTTKHIA Q	11
SEQ ID NO: 702	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 702	
AQLNTTKLAA Q	11
SEQ ID NO: 703	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 703	
AQLNTTKLIA Q	11
SEQ ID NO: 704	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 704	

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AQLNTTKPFA Q	11
SEQ ID NO: 705 FEATURE REGION source SEQUENCE: 705 AQLNTTKPGQ	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 706 FEATURE REGION source SEQUENCE: 706 AQLNTTKPIAQ	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 707 FEATURE REGION source SEQUENCE: 707 AQLNTTKPLAQ	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 708 FEATURE REGION source SEQUENCE: 708 AQLNTTKPMAQ	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 709 FEATURE REGION source SEQUENCE: 709 AQLNTTKPNAQ	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 710 FEATURE REGION source SEQUENCE: 710 AQLNTTKPSAQ	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 711 FEATURE REGION source SEQUENCE: 711 AQLNTTKPATAQ	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 712 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 712
AQLNTTKPVA Q                                         11

SEQ ID NO: 713      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 713
AQLNTTKSIA Q                                         11

SEQ ID NO: 714      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 714
AQLNTTKSVA Q                                         11

SEQ ID NO: 715      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 715
AQLNTTAKTIA Q                                         11

SEQ ID NO: 716      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 716
AQLNTTRPIA Q                                         11

SEQ ID NO: 717      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 717
AQLNTVKPLA Q                                         11

SEQ ID NO: 718      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 718
AQLNYVRQVA Q                                         11

SEQ ID NO: 719      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 719
AQLPQHGSGA Q                                         11

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SEQ ID NO: 720	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 720	
AQLPSAHSSA Q	11
SEQ ID NO: 721	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 721	
AQLSSPSTAA Q	11
SEQ ID NO: 722	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 722	
AQLTNQSSAA Q	11
SEQ ID NO: 723	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 723	
AQLVGTSAQ Q	11
SEQ ID NO: 724	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 724	
AQLVRNTDLAQ Q	11
SEQ ID NO: 725	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 725	
AQMHNIAATPA Q	11
SEQ ID NO: 726	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 726	
AQMNHTRREA Q	11
SEQ ID NO: 727	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein

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SEQUENCE: 727          organism = synthetic construct
AQMNNNTARPA Q           11

SEQ ID NO: 728          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 728          organism = synthetic construct
AQMNNNTKQTA Q           11

SEQ ID NO: 729          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 729          organism = synthetic construct
AQMNNTRGSA Q           11

SEQ ID NO: 730          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 730          organism = synthetic construct
AQMNNNTVRAA Q           11

SEQ ID NO: 731          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 731          organism = synthetic construct
AQMNSTRAAA Q           11

SEQ ID NO: 732          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 732          organism = synthetic construct
AQMMPGHGSSA Q           11

SEQ ID NO: 733          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 733          organism = synthetic construct
AQMPTQHASA Q           11

SEQ ID NO: 734          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 734          organism = synthetic construct
AQMTHSHGSA Q           11

SEQ ID NO: 735          moltype = AA length = 11
FEATURE          Location/Qualifiers

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REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 735	
AQNAHNVSTA Q	11
SEQ ID NO: 736	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 736	
AQNNLTRNNA Q	11
SEQ ID NO: 737	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 737	
AQNNNMTRAIA Q	11
SEQ ID NO: 738	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 738	
AQNNNMTRNNA Q	11
SEQ ID NO: 739	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 739	
AQNNQIKLMA Q	11
SEQ ID NO: 740	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 740	
AQNNRSPTLA Q	11
SEQ ID NO: 741	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 741	
AQNNNSIRLAA Q	11
SEQ ID NO: 742	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 742	

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AQNNSIRSSA Q	11
SEQ ID NO: 743 FEATURE REGION source SEQUENCE: 743 AQNNSTKLLA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 744 FEATURE REGION source SEQUENCE: 744 AQNNSVRPSA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 745 FEATURE REGION source SEQUENCE: 745 AQNNTSKNVA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 746 FEATURE REGION source SEQUENCE: 746 AQNNTTKLAA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 747 FEATURE REGION source SEQUENCE: 747 AQNNTTRRTA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 748 FEATURE REGION source SEQUENCE: 748 AQNNTVKNLA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 749 FEATURE REGION source SEQUENCE: 749 AQNNTVRPSA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 750 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 750
AQNNVVVRSTA Q                                     11

SEQ ID NO: 751          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 751
AQNNYVRSAA Q                                     11

SEQ ID NO: 752          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 752
AQNQHSSQTA Q                                     11

SEQ ID NO: 753          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 753
AQNRGIQSDA Q                                     11

SEQ ID NO: 754          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 754
AQNSHNVPDA Q                                     11

SEQ ID NO: 755          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 755
AQNSNNVAGA Q                                     11

SEQ ID NO: 756          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 756
AQNSRSVSDA Q                                     11

SEQ ID NO: 757          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 757
AQNSSTRGTA Q                                     11

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SEQ ID NO: 758	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 758	
AQNSTKPITA Q	11
SEQ ID NO: 759	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 759	
AQNSTRPLTA Q	11
SEQ ID NO: 760	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 760	
AQNTRGLVEA Q	11
SEQ ID NO: 761	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 761	
AQNTTKGMAA Q	11
SEQ ID NO: 762	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 762	
AQNTTRMTTA Q	11
SEQ ID NO: 763	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 763	
AQNTTRSESA Q	11
SEQ ID NO: 764	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 764	
AQNVRNVLDA Q	11
SEQ ID NO: 765	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein

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SEQUENCE: 765 AQPAGRNLDA Q	organism = synthetic construct	
		11
SEQ ID NO: 766 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein organism = synthetic construct	
SEQUENCE: 766 AQPGYGNQGA Q		11
SEQ ID NO: 767 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein organism = synthetic construct	
SEQUENCE: 767 AQPMRSRDTSA Q		11
SEQ ID NO: 768 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein organism = synthetic construct	
SEQUENCE: 768 AQPNAVKPKMA Q		11
SEQ ID NO: 769 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein organism = synthetic construct	
SEQUENCE: 769 AQPNITRNNA Q		11
SEQ ID NO: 770 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein organism = synthetic construct	
SEQUENCE: 770 AQPNIVRSTA Q		11
SEQ ID NO: 771 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein organism = synthetic construct	
SEQUENCE: 771 AQPNQTKTTA Q		11
SEQ ID NO: 772 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein organism = synthetic construct	
SEQUENCE: 772 AQPNNTKLSA Q		11
SEQ ID NO: 773 FEATURE	moltype = AA length = 11 Location/Qualifiers	

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REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 773	
AQPNTTKPIA Q	11
SEQ ID NO: 774	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 774	
AQPNTTRSTA Q	11
SEQ ID NO: 775	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 775	
AQPNVTRGFA Q	11
SEQ ID NO: 776	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 776	
AQPNVTRTVA Q	11
SEQ ID NO: 777	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 777	
AQQATVRTEA Q	11
SEQ ID NO: 778	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 778	
AQQDRSSAVA Q	11
SEQ ID NO: 779	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 779	
AQQHGVSAQ Q	11
SEQ ID NO: 780	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 780	

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AQQIQRISIDA Q	11
SEQ ID NO: 781	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 781	
AQQNAIRQSA Q	11
SEQ ID NO: 782	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 782	
AQQNATKGIA Q	11
SEQ ID NO: 783	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 783	
AQQNLTRMTA Q	11
SEQ ID NO: 784	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 784	
AQQNNVRPSA Q	11
SEQ ID NO: 785	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 785	
AQQNSIRSVA Q	11
SEQ ID NO: 786	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 786	
AQQNSTRSLA Q	11
SEQ ID NO: 787	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 787	
AQQNTTRTSA Q	11
SEQ ID NO: 788	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 788
AQQNYTKVAA Q                                         11

SEQ ID NO: 789          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 789
AQQRIPSNTA Q                                         11

SEQ ID NO: 790          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 790
AQQRTSSQEA Q                                         11

SEQ ID NO: 791          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 791
AQQSSSRLGA Q                                         11

SEQ ID NO: 792          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 792
AQQVRSMDMGA Q                                         11

SEQ ID NO: 793          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 793
AQRDGLILIA Q                                         11

SEQ ID NO: 794          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 794
AQRDNIILIA Q                                         11

SEQ ID NO: 795          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 795
AQRDSTMHAA Q                                         11

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-continued

SEQ ID NO: 796	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 796	
AQRDTHVFHA Q	11
SEQ ID NO: 797	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 797	
AQRGDLHFQA Q	11
SEQ ID NO: 798	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 798	
AQRLSQSSDA Q	11
SEQ ID NO: 799	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 799	
AQRSGLLILFA Q	11
SEQ ID NO: 800	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 800	
AQRSGSHFVA Q	11
SEQ ID NO: 801	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 801	
AQRVGQSVSA Q	11
SEQ ID NO: 802	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 802	
AQRVVGPLFA Q	11
SEQ ID NO: 803	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein

-continued

SEQUENCE: 803 AQSDRGNHSA Q	organism = synthetic construct	
		11
SEQ ID NO: 804 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein	
SEQUENCE: 804 AQSDSRNASA Q	organism = synthetic construct	
		11
SEQ ID NO: 805 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein	
SEQUENCE: 805 AQSESARGNA Q	organism = synthetic construct	
		11
SEQ ID NO: 806 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein	
SEQUENCE: 806 AQSGHNASGA Q	organism = synthetic construct	
		11
SEQ ID NO: 807 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein	
SEQUENCE: 807 AQSGSHTNSA Q	organism = synthetic construct	
		11
SEQ ID NO: 808 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein	
SEQUENCE: 808 AQSGSSRGEE Q	organism = synthetic construct	
		11
SEQ ID NO: 809 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein	
SEQUENCE: 809 AQSLSQPERA Q	organism = synthetic construct	
		11
SEQ ID NO: 810 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein	
SEQUENCE: 810 AQSMGHSHAA Q	organism = synthetic construct	
		11
SEQ ID NO: 811 FEATURE	moltype = AA length = 11 Location/Qualifiers	

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REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 811	
AQSMSYGSSA Q	11
SEQ ID NO: 812	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 812	
AQSNAAKPVA Q	11
SEQ ID NO: 813	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 813	
AQSNATTRAA Q	11
SEQ ID NO: 814	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 814	
AQSNDIRRNA Q	11
SEQ ID NO: 815	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 815	
AQSNNDTKNTA Q	11
SEQ ID NO: 816	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 816	
AQSNNGIRNTA Q	11
SEQ ID NO: 817	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 817	
AQSNHTRSA Q	11
SEQ ID NO: 818	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 818	

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AQSNLVRQTA Q	11
SEQ ID NO: 819	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 819	
AQSNNAKPSA Q	11
SEQ ID NO: 820	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 820	
AQSNNSSRPA Q	11
SEQ ID NO: 821	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 821	
AQSQNQTRGNA Q	11
SEQ ID NO: 822	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 822	
AQSNSTKMA Q	11
SEQ ID NO: 823	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 823	
AQSNSTKNAA Q	11
SEQ ID NO: 824	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 824	
AQSNSTKNVA Q	11
SEQ ID NO: 825	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 825	
AQSNSTKSLA Q	11
SEQ ID NO: 826	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
	note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 826
AQSNSTRSSA Q                                         11

SEQ ID NO: 827          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 827
AQSNVKAPA Q                                         11

SEQ ID NO: 828          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 828
AQSNVKERA Q                                         11

SEQ ID NO: 829          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 829
AQSNVKITA Q                                         11

SEQ ID NO: 830          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 830
AQSNVKSFA Q                                         11

SEQ ID NO: 831          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 831
AQSNVKTVA Q                                         11

SEQ ID NO: 832          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 832
AQNSVRLVA Q                                         11

SEQ ID NO: 833          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 833
AQSNNTKPIA Q                                         11

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SEQ ID NO: 834	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 834	
AQSNTTRPMA Q	11
SEQ ID NO: 835	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 835	
AQSNTTRQTA Q	11
SEQ ID NO: 836	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 836	
AQSNTTTRAA Q	11
SEQ ID NO: 837	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 837	
AQSNTVKAMA Q	11
SEQ ID NO: 838	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 838	
AQSNTVKNAA Q	11
SEQ ID NO: 839	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 839	
AQSNTVRNSA Q	11
SEQ ID NO: 840	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 840	
AQSNTVRSSA Q	11
SEQ ID NO: 841	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein

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SEQUENCE: 841	organism = synthetic construct
AQSNVIRNSA Q	11
SEQ ID NO: 842	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 842	
AQSNYTRSPA Q	11
SEQ ID NO: 843	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 843	
AQSPSRHTEA Q	11
SEQ ID NO: 844	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 844	
AQSQHASSAA Q	11
SEQ ID NO: 845	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 845	
AQSQSSSGSA Q	11
SEQ ID NO: 846	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 846	
AQSSATRVDA Q	11
SEQ ID NO: 847	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 847	
AQSSGYAQQA Q	11
SEQ ID NO: 848	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 848	
AQSSNSGREA Q	11
SEQ ID NO: 849	moltype = AA length = 11
FEATURE	Location/Qualifiers

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REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 849	
AQSSGGTGA Q	11
SEQ ID NO: 850	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 850	
AQSTAIRQDA Q	11
SEQ ID NO: 851	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 851	
AQSTQTTRAAA Q	11
SEQ ID NO: 852	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 852	
AQSTQVRSEA Q	11
SEQ ID NO: 853	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 853	
AQSTRGNDNA Q	11
SEQ ID NO: 854	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 854	
AQSTSTHGAA Q	11
SEQ ID NO: 855	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 855	
AQTGVRSGDA Q	11
SEQ ID NO: 856	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 856	

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AQTMQRQTNDA Q	11
SEQ ID NO: 857	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 857	
AQTINHTREVA Q	11
SEQ ID NO: 858	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 858	
AQTNHVKTMA Q	11
SEQ ID NO: 859	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 859	
AQTNHVRSAA Q	11
SEQ ID NO: 860	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 860	
AQTNLVKPTA Q	11
SEQ ID NO: 861	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 861	
AQTNMTRTTA Q	11
SEQ ID NO: 862	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 862	
AQTNNAATRPA Q	11
SEQ ID NO: 863	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 863	
AQTNNAVRAA Q	11
SEQ ID NO: 864	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 864
AQTNNNTKSTA Q                                     11

SEQ ID NO: 865          moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 865
AQTNNNLT RSA Q                                     11

SEQ ID NO: 866          moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 866
AQTNNNTSPGA Q                                     11

SEQ ID NO: 867          moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 867
AQTNNVRAPA Q                                     11

SEQ ID NO: 868          moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 868
AQTNNSIKSTA Q                                     11

SEQ ID NO: 869          moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 869
AQTN SIRPIA Q                                     11

SEQ ID NO: 870          moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 870
AQTN SVKLIA Q                                     11

SEQ ID NO: 871          moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 871
AQTN TTKSMA Q                                     11

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SEQ ID NO: 872	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 872	
AQTNTVRASA Q	11
SEQ ID NO: 873	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 873	
AQTNTVRQTA Q	11
SEQ ID NO: 874	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 874	
AQTRGASNEA Q	11
SEQ ID NO: 875	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 875	
AQTSGRSDAA Q	11
SEQ ID NO: 876	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 876	
AQTVSDRSGA Q	11
SEQ ID NO: 877	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 877	
AQVGHSAVSA Q	11
SEQ ID NO: 878	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 878	
AQVHNRADVA Q	11
SEQ ID NO: 879	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein

-continued

SEQUENCE: 879 AQVHSGPVSA Q	organism = synthetic construct	
		11
SEQ ID NO: 880 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein	
SEQUENCE: 880 AQVNATRNVA Q	organism = synthetic construct	
		11
SEQ ID NO: 881 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein	
SEQUENCE: 881 AQVNHTKGLA Q	organism = synthetic construct	
		11
SEQ ID NO: 882 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein	
SEQUENCE: 882 AQVNNSLGNNA Q	organism = synthetic construct	
		11
SEQ ID NO: 883 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein	
SEQUENCE: 883 AQVNSTKSMA Q	organism = synthetic construct	
		11
SEQ ID NO: 884 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein	
SEQUENCE: 884 AQVNSTKSTA Q	organism = synthetic construct	
		11
SEQ ID NO: 885 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein	
SEQUENCE: 885 AQVNSTRGNA Q	organism = synthetic construct	
		11
SEQ ID NO: 886 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic	
source	1..11 mol_type = protein	
SEQUENCE: 886 AQVNNTTKPIA Q	organism = synthetic construct	
		11
SEQ ID NO: 887 FEATURE	moltype = AA length = 11 Location/Qualifiers	

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REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 887	
AQVNNTTQSGA Q	11
SEQ ID NO: 888	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 888	
AQVSDTRAGA Q	11
SEQ ID NO: 889	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 889	
AQVSHSLASA Q	11
SEQ ID NO: 890	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 890	
AQVSSSGMTA Q	11
SEQ ID NO: 891	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 891	
AQSVTRSDA Q	11
SEQ ID NO: 892	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 892	
AQWAANTSGA Q	11
SEQ ID NO: 893	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 893	
AQYAGVSSPA Q	11
SEQ ID NO: 894	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 894	

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AQYGSHGVA Q	11
SEQ ID NO: 895 FEATURE REGION source SEQUENCE: 895 AQYNSTKNGA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 896 FEATURE REGION source SEQUENCE: 896 AQYNSTKNMA Q	11
SEQ ID NO: 897 FEATURE REGION source SEQUENCE: 897 AQYNSTKSHA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 898 FEATURE REGION source SEQUENCE: 898 AQYNTTKPIA Q	11
SEQ ID NO: 899 FEATURE REGION source SEQUENCE: 899 AQAAHNKDSA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 900 FEATURE REGION source SEQUENCE: 900 AQADARNTSA Q	11
SEQ ID NO: 901 FEATURE REGION source SEQUENCE: 901 AQAESRGSA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 902 FEATURE REGION	11
	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 902
AQAESRIGSA Q                                         11

SEQ ID NO: 903      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 903
AQAESRTMPA Q                                         11

SEQ ID NO: 904      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 904
AQAHAAATSAA Q                                         11

SEQ ID NO: 905      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 905
AQAIISLRGDA Q                                         11

SEQ ID NO: 906      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 906
AQAKGSTLLA Q                                         11

SEQ ID NO: 907      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 907
AQALARSVSA Q                                         11

SEQ ID NO: 908      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 908
AQALGQSRVA Q                                         11

SEQ ID NO: 909      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 909
AQALSHSSGA Q                                         11

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SEQ ID NO: 910	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 910	
AQANHTRVAA Q	11
SEQ ID NO: 911	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 911	
AQAQGFNLLA Q	11
SEQ ID NO: 912	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 912	
AQARTGPMIA Q	11
SEQ ID NO: 913	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 913	
AQARTHILQDA Q	11
SEQ ID NO: 914	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 914	
AQARVGATAA Q	11
SEQ ID NO: 915	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 915	
AQARVGTNVA Q	11
SEQ ID NO: 916	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 916	
AQASHSRDAA Q	11
SEQ ID NO: 917	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein

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SEQUENCE: 917	organism = synthetic construct	
AQASSNKTAA Q		11
SEQ ID NO: 918	moltype = AA length = 11	
FEATURE	Location/Qualifiers	
REGION	1..11	
source	note = Synthetic	
	1..11	
	mol_type = protein	
	organism = synthetic construct	
SEQUENCE: 918		
AQASSSTAGA Q		11
SEQ ID NO: 919	moltype = AA length = 11	
FEATURE	Location/Qualifiers	
REGION	1..11	
source	note = Synthetic	
	1..11	
	mol_type = protein	
	organism = synthetic construct	
SEQUENCE: 919		
AQATARNAVA Q		11
SEQ ID NO: 920	moltype = AA length = 11	
FEATURE	Location/Qualifiers	
REGION	1..11	
source	note = Synthetic	
	1..11	
	mol_type = protein	
	organism = synthetic construct	
SEQUENCE: 920		
AQATGRLPEA Q		11
SEQ ID NO: 921	moltype = AA length = 11	
FEATURE	Location/Qualifiers	
REGION	1..11	
source	note = Synthetic	
	1..11	
	mol_type = protein	
	organism = synthetic construct	
SEQUENCE: 921		
AQATRNTDMA Q		11
SEQ ID NO: 922	moltype = AA length = 11	
FEATURE	Location/Qualifiers	
REGION	1..11	
source	note = Synthetic	
	1..11	
	mol_type = protein	
	organism = synthetic construct	
SEQUENCE: 922		
AQATSIRGPA Q		11
SEQ ID NO: 923	moltype = AA length = 11	
FEATURE	Location/Qualifiers	
REGION	1..11	
source	note = Synthetic	
	1..11	
	mol_type = protein	
	organism = synthetic construct	
SEQUENCE: 923		
AQATVSSRIA Q		11
SEQ ID NO: 924	moltype = AA length = 11	
FEATURE	Location/Qualifiers	
REGION	1..11	
source	note = Synthetic	
	1..11	
	mol_type = protein	
	organism = synthetic construct	
SEQUENCE: 924		
AQAVNKPLSA Q		11
SEQ ID NO: 925	moltype = AA length = 11	
FEATURE	Location/Qualifiers	

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REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 925	
AQAVPQSAGA Q	11
SEQ ID NO: 926	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 926	
AQAVPSHHGA Q	11
SEQ ID NO: 927	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 927	
AQAVRGAMNA Q	11
SEQ ID NO: 928	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 928	
AQAVSGIRIA Q	11
SEQ ID NO: 929	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 929	
AQAVSRSVDA Q	11
SEQ ID NO: 930	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 930	
AQAVWPTRNA Q	11
SEQ ID NO: 931	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 931	
AQAYARGESA Q	11
SEQ ID NO: 932	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 932	

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AQAYGETFWA Q	11
SEQ ID NO: 933	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 933	
AQCLGPCLQA Q	11
SEQ ID NO: 934	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 934	
AQDGIRLTPA Q	11
SEQ ID NO: 935	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 935	
AQDGRTVSMA Q	11
SEQ ID NO: 936	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 936	
AQDGSTRMGA Q	11
SEQ ID NO: 937	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 937	
AQDIRSTASA Q	11
SEQ ID NO: 938	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 938	
AQDLSTARSA Q	11
SEQ ID NO: 939	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 939	
AQDLSTRVAA Q	11
SEQ ID NO: 940	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
	note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 940
AQDMSRSTGA Q                                         11

SEQ ID NO: 941      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 941
AQDNVHSRGA Q                                         11

SEQ ID NO: 942      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 942
AQDQHNKSQA Q                                         11

SEQ ID NO: 943      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 943
AQDQKNATGA Q                                         11

SEQ ID NO: 944      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 944
AQDRAQSNMA Q                                         11

SEQ ID NO: 945      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 945
AQDRGTSQTA Q                                         11

SEQ ID NO: 946      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 946
AQDRRSSDLA Q                                         11

SEQ ID NO: 947      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 947
AQDRSHGHNA Q                                         11

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SEQ ID NO: 948	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 948	
AQDRSNTSNA Q	11
SEQ ID NO: 949	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 949	
AQDRSTTHAA Q	11
SEQ ID NO: 950	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 950	
AQDSLPEPYA Q	11
SEQ ID NO: 951	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 951	
AQDSNRAVAA Q	11
SEQ ID NO: 952	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 952	
AQDSNRPSNA Q	11
SEQ ID NO: 953	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 953	
AQDSRQSKEA Q	11
SEQ ID NO: 954	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 954	
AQDSSNRTGA Q	11
SEQ ID NO: 955	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein

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SEQUENCE: 955	organism = synthetic construct
AQDSYTRSAQ	11
SEQ ID NO: 956	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 956	
AQDTHARGLAQ	11
SEQ ID NO: 957	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 957	
AQDTRQSFSAQ	11
SEQ ID NO: 958	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 958	
AQEASIRSGAQ	11
SEQ ID NO: 959	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 959	
AQEGNISRPAQ	11
SEQ ID NO: 960	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 960	
AQELTMPPYAQ	11
SEQ ID NO: 961	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 961	
AQEMSKANMAQ	11
SEQ ID NO: 962	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 962	
AQENQRSGAAQ	11
SEQ ID NO: 963	moltype = AA length = 11
FEATURE	Location/Qualifiers

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REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 963	
AQERGKNLEA Q	11
SEQ ID NO: 964	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 964	
AQERGTVSTA Q	11
SEQ ID NO: 965	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 965	
AQERNALREA Q	11
SEQ ID NO: 966	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 966	
AQESGQRNQA Q	11
SEQ ID NO: 967	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 967	
AQESNSYRPA Q	11
SEQ ID NO: 968	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 968	
AQESRATTPA Q	11
SEQ ID NO: 969	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 969	
AQESTKYHAA Q	11
SEQ ID NO: 970	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 970	

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AQEESTRISGA Q	11
SEQ ID NO: 971	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 971	
AQETGRYNPA Q	11
SEQ ID NO: 972	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 972	
AQETTSWVFA Q	11
SEQ ID NO: 973	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 973	
AQEVRNRSSYA Q	11
SEQ ID NO: 974	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 974	
AQEVSRGKDA Q	11
SEQ ID NO: 975	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 975	
AQBYGKATAA Q	11
SEQ ID NO: 976	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 976	
AQFAGMRTAA Q	11
SEQ ID NO: 977	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 977	
AQPDPSVRNSA Q	11
SEQ ID NO: 978	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 978
AQFGSRDGSA Q                                         11

SEQ ID NO: 979      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 979
AQFGSRQPEA Q                                         11

SEQ ID NO: 980      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 980
AQFHNTRSEA Q                                         11

SEQ ID NO: 981      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 981
AQFNSDRPGA Q                                         11

SEQ ID NO: 982      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 982
AQFNSTRIVA Q                                         11

SEQ ID NO: 983      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 983
AQPNVSSTGA Q                                         11

SEQ ID NO: 984      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 984
AQFQVATRDA Q                                         11

SEQ ID NO: 985      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 985
AQFSNRTASA Q                                         11

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SEQ ID NO: 986	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 986	
AQFSRGVNEA Q	11
SEQ ID NO: 987	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 987	
AQGAGALRGA Q	11
SEQ ID NO: 988	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 988	
AQGAGARTLEA Q	11
SEQ ID NO: 989	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 989	
AQGDRLTHGA Q	11
SEQ ID NO: 990	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 990	
AQGFHHSVSA Q	11
SEQ ID NO: 991	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 991	
AQGGTAARGA Q	11
SEQ ID NO: 992	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 992	
AQGGVRNAEA Q	11
SEQ ID NO: 993	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein

-continued

SEQUENCE: 993	organism = synthetic construct
AQGHHRHTVEA Q	11
SEQ ID NO: 994	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 994	
AQGHSANLGA Q	11
SEQ ID NO: 995	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 995	
AQQIRNQAEA Q	11
SEQ ID NO: 996	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 996	
AQGLGTSSNA Q	11
SEQ ID NO: 997	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 997	
AQGLNRRLTPA Q	11
SEQ ID NO: 998	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 998	
AQGLRSSDSA Q	11
SEQ ID NO: 999	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 999	
AQGMRTSNDA Q	11
SEQ ID NO: 1000	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1000	
AQGNNGSRMAA Q	11
SEQ ID NO: 1001	moltype = AA length = 11
FEATURE	Location/Qualifiers

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REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1001	
AQGNRIAREA Q	11
SEQ ID NO: 1002	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1002	
AQGRSLTTDA Q	11
SEQ ID NO: 1003	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1003	
AQGSKPKSQMA Q	11
SEQ ID NO: 1004	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1004	
AQGSYANSQA Q	11
SEQ ID NO: 1005	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1005	
AQGVAKGNEA Q	11
SEQ ID NO: 1006	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1006	
AQGVMGMRNA Q	11
SEQ ID NO: 1007	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1007	
AQGVRSGLSA Q	11
SEQ ID NO: 1008	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1008	

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AQGVRSHDAA Q	11
SEQ ID NO: 1009 FEATURE REGION source SEQUENCE: 1009 AQGVSNRANA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 1010 FEATURE REGION source SEQUENCE: 1010 AQGVS RATPA Q	11
SEQ ID NO: 1011 FEATURE REGION source SEQUENCE: 1011 AQGVTLGSRA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 1012 FEATURE REGION source SEQUENCE: 1012 AQGYNSTPG A Q	11
SEQ ID NO: 1013 FEATURE REGION source SEQUENCE: 1013 AQGYSGATGA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 1014 FEATURE REGION source SEQUENCE: 1014 AQGYSHSSGA Q	11
SEQ ID NO: 1015 FEATURE REGION source SEQUENCE: 1015 AQHFVDSGLA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 1016 FEATURE REGION	11
	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1016
AQHGTSRPDA Q                                         11

SEQ ID NO: 1017      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1017
AQHIVTHDLA Q                                         11

SEQ ID NO: 1018      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1018
AQHLVDRSLA Q                                         11

SEQ ID NO: 1019      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1019
AQHMDSDPHA Q                                         11

SEQ ID NO: 1020      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1020
AQHMVPSSLQ Q                                         11

SEQ ID NO: 1021      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1021
AQHNLPVLHA Q                                         11

SEQ ID NO: 1022      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1022
AQHNPTRADA Q                                         11

SEQ ID NO: 1023      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1023
AQHPVQSSLA Q                                         11

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SEQ ID NO: 1024      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1024      AQHQAKLQNA Q
                                         11

SEQ ID NO: 1025      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1025      AQHQIAYDLA Q
                                         11

SEQ ID NO: 1026      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1026      AQHQVPSLLA Q
                                         11

SEQ ID NO: 1027      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1027      AQHRIATVEA Q
                                         11

SEQ ID NO: 1028      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1028      AQHRVSEHFA Q
                                         11

SEQ ID NO: 1029      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1029      AQHSSIGSSA Q
                                         11

SEQ ID NO: 1030      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1030      AQHSVSHHFA Q
                                         11

SEQ ID NO: 1031      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein

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SEQUENCE: 1031          organism = synthetic construct
AQHYLSTDFA Q                         11

SEQ ID NO: 1032          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1032          organism = synthetic construct
AQIASRGLAA Q                         11

SEQ ID NO: 1033          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1033          organism = synthetic construct
AQIDNRHNGA Q                         11

SEQ ID NO: 1034          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1034          organism = synthetic construct
AQIGASSGGGA Q                         11

SEQ ID NO: 1035          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1035          organism = synthetic construct
AQIGGAVTTA Q                         11

SEQ ID NO: 1036          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1036          organism = synthetic construct
AQIGGHHERPA Q                         11

SEQ ID NO: 1037          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1037          organism = synthetic construct
AQIGHVSANA Q                         11

SEQ ID NO: 1038          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1038          organism = synthetic construct
AQIGRVTNNEA Q                         11

SEQ ID NO: 1039          moltype = AA  length = 11
FEATURE           Location/Qualifiers

```

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REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1039	
AQIGSRASDA Q	11
SEQ ID NO: 1040	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1040	
AQIGSSRLGA Q	11
SEQ ID NO: 1041	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1041	
AQIHGKEREQ Q	11
SEQ ID NO: 1042	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1042	
AQIHLSSATA Q	11
SEQ ID NO: 1043	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1043	
AQIHSRGDTA Q	11
SEQ ID NO: 1044	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1044	
AQIHSTNPGQ Q	11
SEQ ID NO: 1045	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1045	
AQIIISNRVA Q	11
SEQ ID NO: 1046	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1046	

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AQILHLPMNA Q	11
SEQ ID NO: 1047	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1047	
AQILTSTVGA Q	11
SEQ ID NO: 1048	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1048	
AQINSTATGQ Q	11
SEQ ID NO: 1049	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1049	
AQIPNPFPTLA Q	11
SEQ ID NO: 1050	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1050	
AQIPSGNVSA Q	11
SEQ ID NO: 1051	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1051	
AQIPSKSPAA Q	11
SEQ ID NO: 1052	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1052	
AQIPSTHTGA Q	11
SEQ ID NO: 1053	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1053	
AQIPSTRAGA Q	11
SEQ ID NO: 1054	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
	note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1054
AQIRHGATDA Q                                         11

SEQ ID NO: 1055      moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1055
AQIRPRPEDA Q                                         11

SEQ ID NO: 1056      moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1056
AQIRSDHSSA Q                                         11

SEQ ID NO: 1057      moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1057
AQIRSDSAMA Q                                         11

SEQ ID NO: 1058      moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1058
AQIRSSTGDA Q                                         11

SEQ ID NO: 1059      moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1059
AQIRSSTIFA Q                                         11

SEQ ID NO: 1060      moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1060
AQIRTMSSSEA Q                                         11

SEQ ID NO: 1061      moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1061
AQISNRTSSA Q                                         11

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-continued

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SEQ ID NO: 1062      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
source            note = Synthetic
                  1..11
                  mol_type = protein
                  organism = synthetic construct
SEQUENCE: 1062     AQISRQEVLQ
                                         11

SEQ ID NO: 1063      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
source            note = Synthetic
                  1..11
                  mol_type = protein
                  organism = synthetic construct
SEQUENCE: 1063     AQISSHSPGAQ
                                         11

SEQ ID NO: 1064      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
source            note = Synthetic
                  1..11
                  mol_type = protein
                  organism = synthetic construct
SEQUENCE: 1064     AQISSSRLSAQ
                                         11

SEQ ID NO: 1065      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
source            note = Synthetic
                  1..11
                  mol_type = protein
                  organism = synthetic construct
SEQUENCE: 1065     AQISVSLRSAQ
                                         11

SEQ ID NO: 1066      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
source            note = Synthetic
                  1..11
                  mol_type = protein
                  organism = synthetic construct
SEQUENCE: 1066     AQITGVPMNAQ
                                         11

SEQ ID NO: 1067      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
source            note = Synthetic
                  1..11
                  mol_type = protein
                  organism = synthetic construct
SEQUENCE: 1067     AQITRNADNAQ
                                         11

SEQ ID NO: 1068      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
source            note = Synthetic
                  1..11
                  mol_type = protein
                  organism = synthetic construct
SEQUENCE: 1068     AQITSSTQFAQ
                                         11

SEQ ID NO: 1069      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
source            note = Synthetic
                  1..11
                  mol_type = protein

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SEQUENCE: 1069          organism = synthetic construct
AQITTRIEQA Q                         11

SEQ ID NO: 1070          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1070          organism = synthetic construct
AQIVKPNITA Q                         11

SEQ ID NO: 1071          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1071          organism = synthetic construct
AQIVSRTEA Q                         11

SEQ ID NO: 1072          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1072          organism = synthetic construct
AQIVVRGDSA Q                         11

SEQ ID NO: 1073          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1073          organism = synthetic construct
AQIYSASTPA Q                         11

SEQ ID NO: 1074          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1074          organism = synthetic construct
AQKGQPPFLA Q                         11

SEQ ID NO: 1075          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1075          organism = synthetic construct
AQKHHVPFDA Q                         11

SEQ ID NO: 1076          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1076          organism = synthetic construct
AQKLDLPMTA Q                         11

SEQ ID NO: 1077          moltype = AA  length = 11
FEATURE           Location/Qualifiers

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REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1077	
AQKLLGGGLSA Q	11
SEQ ID NO: 1078	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1078	
AQKLSLPTTA Q	11
SEQ ID NO: 1079	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1079	
AQKNGQPVQA Q	11
SEQ ID NO: 1080	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1080	
AQKPYVPHDA Q	11
SEQ ID NO: 1081	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1081	
AQKQRSEDPA Q	11
SEQ ID NO: 1082	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1082	
AQKSGSMLVA Q	11
SEQ ID NO: 1083	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1083	
AQKSQSLAGA Q	11
SEQ ID NO: 1084	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1084	

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AQKSQTSYMA Q	11
SEQ ID NO: 1085	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1085	
AQKTTTSLAA Q	11
SEQ ID NO: 1086	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1086	
AQLAGRGAQ Q	11
SEQ ID NO: 1087	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1087	
AQLAPIMREA Q	11
SEQ ID NO: 1088	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1088	
AQLATTRVEA Q	11
SEQ ID NO: 1089	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1089	
AQLDRANPQA Q	11
SEQ ID NO: 1090	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1090	
AQLEHRSGSA Q	11
SEQ ID NO: 1091	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1091	
AQLFGPLLAA Q	11
SEQ ID NO: 1092	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1092
AQLFSWRNAA Q                                         11

SEQ ID NO: 1093      moltype = AA length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1093
AQLFTTSNIA Q                                         11

SEQ ID NO: 1094      moltype = AA length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1094
AQLGHSLTSA Q                                         11

SEQ ID NO: 1095      moltype = AA length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1095
AQLGHSSQIA Q                                         11

SEQ ID NO: 1096      moltype = AA length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1096
AQLGNLGHQA Q                                         11

SEQ ID NO: 1097      moltype = AA length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1097
AQLGRVQSDA Q                                         11

SEQ ID NO: 1098      moltype = AA length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1098
AQLGSSSVSA Q                                         11

SEQ ID NO: 1099      moltype = AA length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1099
AQLHGPTLLA Q                                         11

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SEQ ID NO: 1100      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1100
AQLHGVPMNA Q                                              11

SEQ ID NO: 1101      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1101
AQLHHNRESA Q                                              11

SEQ ID NO: 1102      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1102
AQLHNFPDNA Q                                              11

SEQ ID NO: 1103      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1103
AQLHSIGTSA Q                                              11

SEQ ID NO: 1104      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1104
AQLHSSTLGA Q                                              11

SEQ ID NO: 1105      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1105
AQLIHNGAAA Q                                              11

SEQ ID NO: 1106      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1106
AQLKVGPMDA Q                                              11

SEQ ID NO: 1107      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein

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SEQUENCE: 1107          organism = synthetic construct
AQLKVPVLMA Q                         11

SEQ ID NO: 1108          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1108          organism = synthetic construct
AQLLDHISKA Q                         11

SEQ ID NO: 1109          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1109          organism = synthetic construct
AQLLPATRDA Q                         11

SEQ ID NO: 1110          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1110          organism = synthetic construct
AQLNHGANAA Q                         11

SEQ ID NO: 1111          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1111          organism = synthetic construct
AQLNHTRPGA Q                         11

SEQ ID NO: 1112          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1112          organism = synthetic construct
AQLNSPSFLA Q                         11

SEQ ID NO: 1113          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1113          organism = synthetic construct
AQLNSSRASA Q                         11

SEQ ID NO: 1114          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1114          organism = synthetic construct
AQLNSVKHYA Q                         11

SEQ ID NO: 1115          moltype = AA  length = 11
FEATURE           Location/Qualifiers

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REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1115	
AQLNTTKTNA Q	11
SEQ ID NO: 1116	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1116	
AQLPGRSTSA Q	11
SEQ ID NO: 1117	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1117	
AQLPSYHSAA Q	11
SEQ ID NO: 1118	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1118	
AQLQRSTDGA Q	11
SEQ ID NO: 1119	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1119	
AQLQTTYSSA Q	11
SEQ ID NO: 1120	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1120	
AQLRNSSGDA Q	11
SEQ ID NO: 1121	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1121	
AQLRSLSAEE Q	11
SEQ ID NO: 1122	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1122	

-continued

AQLSHSYSSA Q	11
SEQ ID NO: 1123	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1123	
AQLSNSVKTA Q	11
SEQ ID NO: 1124	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1124	
AQLSSHAYQA Q	11
SEQ ID NO: 1125	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1125	
AQLSSRPDAQ Q	11
SEQ ID NO: 1126	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1126	
AQLSSSRSAQ Q	11
SEQ ID NO: 1127	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1127	
AQLSSSYTVA Q	11
SEQ ID NO: 1128	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1128	
AQLSTSYSSA Q	11
SEQ ID NO: 1129	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1129	
AQLTHVSNIA Q	11
SEQ ID NO: 1130	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1130
AQLTTSVRIA Q                                         11

SEQ ID NO: 1131      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1131
AQLTTTRTEA Q                                         11

SEQ ID NO: 1132      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1132
AQLTAVGRSA Q                                         11

SEQ ID NO: 1133      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1133
AQMGSKSNEA Q                                         11

SEQ ID NO: 1134      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1134
AQMKVPILLA Q                                         11

SEQ ID NO: 1135      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1135
AQMLAGRESA Q                                         11

SEQ ID NO: 1136      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1136
AQMNAGRSGA Q                                         11

SEQ ID NO: 1137      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1137
AQMNSSKPTA Q                                         11

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SEQ ID NO: 1138      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1138
AQMNNSVRTGA Q                                              11

SEQ ID NO: 1139      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1139
AQMNTSRSPA Q                                              11

SEQ ID NO: 1140      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1140
AQMNTTRVPA Q                                              11

SEQ ID NO: 1141      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1141
AQMPTKMTDA Q                                              11

SEQ ID NO: 1142      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1142
AQMRGTSNEA Q                                              11

SEQ ID NO: 1143      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1143
AQMRTLTGDA Q                                              11

SEQ ID NO: 1144      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1144
AQMRITSHTEA Q                                              11

SEQ ID NO: 1145      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein

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SEQUENCE: 1145          organism = synthetic construct
AQMRTSNLTA Q                         11

SEQ ID NO: 1146          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1146          organism = synthetic construct
AQMMSGHRQDA Q                         11

SEQ ID NO: 1147          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1147          organism = synthetic construct
AQMSHSSGAA Q                         11

SEQ ID NO: 1148          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1148          organism = synthetic construct
AQMSNRVLEA Q                         11

SEQ ID NO: 1149          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1149          organism = synthetic construct
AQMSTTRSSA Q                         11

SEQ ID NO: 1150          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1150          organism = synthetic construct
AQMTSKPESA Q                         11

SEQ ID NO: 1151          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1151          organism = synthetic construct
AQMVNRVQSA Q                         11

SEQ ID NO: 1152          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1152          organism = synthetic construct
AQMVR SNDPA Q                         11

SEQ ID NO: 1153          moltype = AA  length = 11
FEATURE           Location/Qualifiers

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REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1153	
AQMYTTGQSA Q	11
SEQ ID NO: 1154	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1154	
AQNAGRYGDA Q	11
SEQ ID NO: 1155	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1155	
AQNGARTPPA Q	11
SEQ ID NO: 1156	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1156	
AQNGQRLSPA Q	11
SEQ ID NO: 1157	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1157	
AQNGRVGSNA Q	11
SEQ ID NO: 1158	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1158	
AQNGSATRVA Q	11
SEQ ID NO: 1159	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1159	
AQNGSKLAGA Q	11
SEQ ID NO: 1160	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1160	

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AQNGSRVIAA Q	11
SEQ ID NO: 1161	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1161	
AQNGETMRLAA Q	11
SEQ ID NO: 1162	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1162	
AQNHRPSGDA Q	11
SEQ ID NO: 1163	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1163	
AQNLANTRDA Q	11
SEQ ID NO: 1164	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1164	
AQNLQPGKIA Q	11
SEQ ID NO: 1165	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1165	
AQNLRGTSVA Q	11
SEQ ID NO: 1166	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1166	
AQNLSSVNGA Q	11
SEQ ID NO: 1167	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1167	
AQNRTGGFDA Q	11
SEQ ID NO: 1168	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1168
AQNRVAQGEA Q                                         11

SEQ ID NO: 1169      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1169
AQNSATMRQA Q                                         11

SEQ ID NO: 1170      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1170
AQNSDPYRFA Q                                         11

SEQ ID NO: 1171      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1171
AQNSHISRDA Q                                         11

SEQ ID NO: 1172      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1172
AQNSQTLRSA Q                                         11

SEQ ID NO: 1173      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1173
AQNSRAAEHA Q                                         11

SEQ ID NO: 1174      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1174
AQNSRGPVAA Q                                         11

SEQ ID NO: 1175      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1175
AQNSSHANSA Q                                         11

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SEQ ID NO: 1176      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1176
AQNSTQYNAA Q                                              11

SEQ ID NO: 1177      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1177
AQNTGHASMA Q                                              11

SEQ ID NO: 1178      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1178
AQNTGRSDSA Q                                              11

SEQ ID NO: 1179      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1179
AQNTNMPQYA Q                                              11

SEQ ID NO: 1180      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1180
AQNTSSVRGA Q                                              11

SEQ ID NO: 1181      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1181
AQNTVNVSGA Q                                              11

SEQ ID NO: 1182      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1182
AQNVAGRLDA Q                                              11

SEQ ID NO: 1183      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein

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SEQUENCE: 1183          organism = synthetic construct
AQNVSNLHGA Q                         11

SEQ ID NO: 1184          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1184          organism = synthetic construct
AQNVSQRLRDA Q                         11

SEQ ID NO: 1185          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1185          organism = synthetic construct
AQNVTRGHEA Q                         11

SEQ ID NO: 1186          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1186          organism = synthetic construct
AQNVTGVNSGA Q                         11

SEQ ID NO: 1187          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1187          organism = synthetic construct
AQPARPNPNA Q                         11

SEQ ID NO: 1188          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1188          organism = synthetic construct
AQFTPCKPMA Q                         11

SEQ ID NO: 1189          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1189          organism = synthetic construct
AQPGVGKQPA Q                         11

SEQ ID NO: 1190          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1190          organism = synthetic construct
AQPHDSVMWA Q                         11

SEQ ID NO: 1191          moltype = AA  length = 11
FEATURE           Location/Qualifiers

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REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1191	
AQPINLPMMA Q	11
SEQ ID NO: 1192	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1192	
AQPKSSHEWA Q	11
SEQ ID NO: 1193	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1193	
AQPNNTIRGA Q	11
SEQ ID NO: 1194	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1194	
AQPQKGTGSAA Q	11
SEQ ID NO: 1195	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1195	
AQPQSGPLPA Q	11
SEQ ID NO: 1196	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1196	
AQPQSNRPAA Q	11
SEQ ID NO: 1197	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1197	
AQPQSRGDAA Q	11
SEQ ID NO: 1198	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1198	

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AQPRLPEVFA Q	11
SEQ ID NO: 1199 FEATURE REGION source SEQUENCE: 1199 AQPRTGTPPA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 1200 FEATURE REGION source SEQUENCE: 1200 AQPSHSVLFA Q	11
SEQ ID NO: 1201 FEATURE REGION source SEQUENCE: 1201 AQPSRGQTAA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 1202 FEATURE REGION source SEQUENCE: 1202 AQPSRGQTTA Q	11
SEQ ID NO: 1203 FEATURE REGION source SEQUENCE: 1203 AQBSTDTFWA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 1204 FEATURE REGION source SEQUENCE: 1204 AQPSVTGRSA Q	11
SEQ ID NO: 1205 FEATURE REGION source SEQUENCE: 1205 AQPSYGGSGA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 1206 FEATURE REGION	11
	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1206
AQPTGLPINA Q                                         11

SEQ ID NO: 1207      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1207
AQPTQRTGTA Q                                         11

SEQ ID NO: 1208      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1208
AQPTRGTGTA Q                                         11

SEQ ID NO: 1209      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1209
AQPTSLPMA Q                                         11

SEQ ID NO: 1210      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1210
AQPVSRSPAA Q                                         11

SEQ ID NO: 1211      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1211
AQQAGRSVAA Q                                         11

SEQ ID NO: 1212      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1212
AQQAGSSVAA Q                                         11

SEQ ID NO: 1213      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1213
AQQASRNEIA Q                                         11

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SEQ ID NO: 1214      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1214      11
AQQAATRGDSA Q

SEQ ID NO: 1215      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1215      11
AQQDRILSAA Q

SEQ ID NO: 1216      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1216      11
AQQDSMRGLA Q

SEQ ID NO: 1217      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1217      11
AQQDTRSHAA Q

SEQ ID NO: 1218      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1218      11
AQQGGLILLA Q

SEQ ID NO: 1219      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1219      11
AQQGSIRSDA Q

SEQ ID NO: 1220      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1220      11
AQQQGYGGQTA Q

SEQ ID NO: 1221      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein

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SEQUENCE: 1221          organism = synthetic construct
AQQHAPSLLA Q                         11

SEQ ID NO: 1222          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1222          organism = synthetic construct
AQQLPGLLHA Q                         11

SEQ ID NO: 1223          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1223          organism = synthetic construct
AQQLSNKTNA Q                         11

SEQ ID NO: 1224          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1224          organism = synthetic construct
AQQLSRDVPA Q                         11

SEQ ID NO: 1225          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1225          organism = synthetic construct
AQQLVQHRDA Q                         11

SEQ ID NO: 1226          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1226          organism = synthetic construct
AQQMRTGGIA Q                         11

SEQ ID NO: 1227          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1227          organism = synthetic construct
AQQPGYSSDA Q                         11

SEQ ID NO: 1228          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1228          organism = synthetic construct
AQQPRANQIA Q                         11

SEQ ID NO: 1229          moltype = AA  length = 11
FEATURE           Location/Qualifiers

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REGION          1..11
source          note = Synthetic
                1..11
                mol_type = protein
                organism = synthetic construct
SEQUENCE: 1229
AQQPRTNESQA Q                                         11

SEQ ID NO: 1230          moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION          1..11
source          note = Synthetic
                1..11
                mol_type = protein
                organism = synthetic construct
SEQUENCE: 1230
AQQQLPVLMA Q                                         11

SEQ ID NO: 1231          moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION          1..11
source          note = Synthetic
                1..11
                mol_type = protein
                organism = synthetic construct
SEQUENCE: 1231
AQQRESPLDA Q                                         11

SEQ ID NO: 1232          moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION          1..11
source          note = Synthetic
                1..11
                mol_type = protein
                organism = synthetic construct
SEQUENCE: 1232
AQQRHLPTDA Q                                         11

SEQ ID NO: 1233          moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION          1..11
source          note = Synthetic
                1..11
                mol_type = protein
                organism = synthetic construct
SEQUENCE: 1233
AQQSAGKLGA Q                                         11

SEQ ID NO: 1234          moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION          1..11
source          note = Synthetic
                1..11
                mol_type = protein
                organism = synthetic construct
SEQUENCE: 1234
AQQSLSSLSA Q                                         11

SEQ ID NO: 1235          moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION          1..11
source          note = Synthetic
                1..11
                mol_type = protein
                organism = synthetic construct
SEQUENCE: 1235
AQQSNLPMTA Q                                         11

SEQ ID NO: 1236          moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION          1..11
source          note = Synthetic
                1..11
                mol_type = protein
                organism = synthetic construct
SEQUENCE: 1236

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AQQSNVYREA Q	11
SEQ ID NO: 1237	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1237	
AQQTSRLQEA Q	11
SEQ ID NO: 1238	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1238	
AQQTTDRSGA Q	11
SEQ ID NO: 1239	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1239	
AQQVGPILMA Q	11
SEQ ID NO: 1240	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1240	
AQQVGGSYQHA Q	11
SEQ ID NO: 1241	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1241	
AQQVSTARPA Q	11
SEQ ID NO: 1242	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1242	
AQQYGSVSQA Q	11
SEQ ID NO: 1243	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1243	
AQQYSSGSSA Q	11
SEQ ID NO: 1244	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1244
AQRAGVVSQIA Q                                     11

SEQ ID NO: 1245        moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1245
AQRDRTTYTTA Q                                     11

SEQ ID NO: 1246        moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1246
AQRERSSEVA Q                                     11

SEQ ID NO: 1247        moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1247
AQRGHGSSDA Q                                     11

SEQ ID NO: 1248        moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1248
AQRGPLTLLA Q                                     11

SEQ ID NO: 1249        moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1249
AQRGTL DLLA Q                                     11

SEQ ID NO: 1250        moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1250
AQRIASPYDA Q                                     11

SEQ ID NO: 1251        moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1251
AQRIGHTATVA Q                                     11

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SEQ ID NO: 1252      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1252
AQRIGHTMSAA Q                                              11

SEQ ID NO: 1253      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1253
AQRLPGGLSA Q                                              11

SEQ ID NO: 1254      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1254
AQRLTQHEPA Q                                              11

SEQ ID NO: 1255      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1255
AQRMSNGSTA Q                                              11

SEQ ID NO: 1256      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1256
AQRMSSSSDA Q                                              11

SEQ ID NO: 1257      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1257
AQRNHSAGDA Q                                              11

SEQ ID NO: 1258      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1258
AQRNLPQVYA Q                                              11

SEQ ID NO: 1259      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein

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SEQUENCE: 1259          organism = synthetic construct
AQRNYSPTEA Q                         11

SEQ ID NO: 1260          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1260          organism = synthetic construct
AQRPEVPNWA Q                         11

SEQ ID NO: 1261          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1261          organism = synthetic construct
AQRPQGSAGA Q                         11

SEQ ID NO: 1262          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1262          organism = synthetic construct
AQRPTMPEYA Q                         11

SEQ ID NO: 1263          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1263          organism = synthetic construct
AQRSDRLTDA Q                         11

SEQ ID NO: 1264          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1264          organism = synthetic construct
AQRSGMAVEA Q                         11

SEQ ID NO: 1265          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1265          organism = synthetic construct
AQRSGSGSADA Q                         11

SEQ ID NO: 1266          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1266          organism = synthetic construct
AQRSGSSADA Q                         11

SEQ ID NO: 1267          moltype = AA  length = 11
FEATURE           Location/Qualifiers

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REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1267	
AQRSNLLAEA Q	11
SEQ ID NO: 1268	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1268	
AQRSNSSVGA Q	11
SEQ ID NO: 1269	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1269	
AQRSTAIVAA Q	11
SEQ ID NO: 1270	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1270	
AQRTGMTGAA Q	11
SEQ ID NO: 1271	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1271	
AQRTGSVVNA Q	11
SEQ ID NO: 1272	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1272	
AQRTGTQSSA Q	11
SEQ ID NO: 1273	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1273	
AQRTIGTSTA Q	11
SEQ ID NO: 1274	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1274	

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AQRTSQIQSA Q	11
SEQ ID NO: 1275 FEATURE REGION source SEQUENCE: 1275 AQRVGASGTA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 1276 FEATURE REGION source SEQUENCE: 1276 AQRVGSSLSA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 1277 FEATURE REGION source SEQUENCE: 1277 AQRPAGGGAA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 1278 FEATURE REGION source SEQUENCE: 1278 AQRVSATQTA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 1279 FEATURE REGION source SEQUENCE: 1279 AQRVVGGLTA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 1280 FEATURE REGION source SEQUENCE: 1280 AQSALHVSGA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 1281 FEATURE REGION source SEQUENCE: 1281 AQSASLGYYA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 1282 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1282
AQASASLRSDA Q                                         11

SEQ ID NO: 1283      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1283
AQSAVVRSGA Q                                         11

SEQ ID NO: 1284      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1284
AQSDMPRTFA Q                                         11

SEQ ID NO: 1285      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1285
AQSDTRSMSA Q                                         11

SEQ ID NO: 1286      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1286
AQSFNHNHGATA Q                                         11

SEQ ID NO: 1287      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1287
AQSFTRIPPA Q                                         11

SEQ ID NO: 1288      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1288
AQSGNFSGGA Q                                         11

SEQ ID NO: 1289      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1289
AQSGSALHGA Q                                         11

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SEQ ID NO: 1290      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1290
AQSGSRLLDA Q                                              11

SEQ ID NO: 1291      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1291
AQSGSSRDMA Q                                              11

SEQ ID NO: 1292      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1292
AQSGSSRPSA Q                                              11

SEQ ID NO: 1293      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1293
AQSGSYSTVA Q                                              11

SEQ ID NO: 1294      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1294
AQSHFKFLYA Q                                              11

SEQ ID NO: 1295      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1295
AQSHSASREA Q                                              11

SEQ ID NO: 1296      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1296
AQSHSNTGNA Q                                              11

SEQ ID NO: 1297      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein

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SEQUENCE: 1297          organism = synthetic construct
AQSIPGKGMA Q                         11

SEQ ID NO: 1298          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1298          organism = synthetic construct
AQSIRSQLPA Q                         11

SEQ ID NO: 1299          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1299          organism = synthetic construct
AQSISAGRVA Q                         11

SEQ ID NO: 1300          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1300          organism = synthetic construct
AQSISGRSDA Q                         11

SEQ ID NO: 1301          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1301          organism = synthetic construct
AQSISGRVGA Q                         11

SEQ ID NO: 1302          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1302          organism = synthetic construct
AQSISROSEA Q                         11

SEQ ID NO: 1303          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1303          organism = synthetic construct
AQSISRSGYA Q                         11

SEQ ID NO: 1304          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1304          organism = synthetic construct
AQSLAAEFWA Q                         11

SEQ ID NO: 1305          moltype = AA  length = 11
FEATURE           Location/Qualifiers

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REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1305	
AQSLDPPLGLA Q	11
SEQ ID NO: 1306	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1306	
AQSLIHSIWA Q	11
SEQ ID NO: 1307	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1307	
AQSLNRVVEA Q	11
SEQ ID NO: 1308	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1308	
AQSLQRSVDA Q	11
SEQ ID NO: 1309	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1309	
AQSLSRDGTA Q	11
SEQ ID NO: 1310	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1310	
AQSLVKSGQA Q	11
SEQ ID NO: 1311	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1311	
AQSMSRLNEA Q	11
SEQ ID NO: 1312	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1312	

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AQSNTLRNVA Q	11
SEQ ID NO: 1313	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1313	
AQSNVYVRSPA Q	11
SEQ ID NO: 1314	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1314	
AQSPRSNVTA Q	11
SEQ ID NO: 1315	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1315	
AQSPRSSIGA Q	11
SEQ ID NO: 1316	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1316	
AQSPVAPNWA Q	11
SEQ ID NO: 1317	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1317	
AQSQALRADA Q	11
SEQ ID NO: 1318	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1318	
AQSQGVRVPA Q	11
SEQ ID NO: 1319	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1319	
AQSQKMLHGA Q	11
SEQ ID NO: 1320	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1320
AQSQPGPFNA Q                                         11

SEQ ID NO: 1321      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1321
AQSQSAKGPA Q                                         11

SEQ ID NO: 1322      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1322
AQSRGQTTDA Q                                         11

SEQ ID NO: 1323      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1323
AQSRGSETTA Q                                         11

SEQ ID NO: 1324      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1324
AQSRISNVSA Q                                         11

SEQ ID NO: 1325      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1325
AQSRQTGLTA Q                                         11

SEQ ID NO: 1326      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1326
AQSRSQATDA Q                                         11

SEQ ID NO: 1327      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1327
AQSRSTDTGA Q                                         11

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SEQ ID NO: 1328      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1328
AQSRVGLSTA Q                                              11

SEQ ID NO: 1329      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1329
AQSSAGKSPA Q                                              11

SEQ ID NO: 1330      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1330
AQSSAGRTGA Q                                              11

SEQ ID NO: 1331      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1331
AQSSATVREA Q                                              11

SEQ ID NO: 1332      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1332
AQSSDSRSSA Q                                              11

SEQ ID NO: 1333      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1333
AQSSGISRDA Q                                              11

SEQ ID NO: 1334      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1334
AQSSGPILIA Q                                              11

SEQ ID NO: 1335      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein

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SEQUENCE: 1335	organism = synthetic construct
AQSSHSANMA Q	11
SEQ ID NO: 1336	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1336	
AQSSIVRQEAA Q	11
SEQ ID NO: 1337	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1337	
AQSSQNVSGA Q	11
SEQ ID NO: 1338	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1338	
AQSSQRGHEA Q	11
SEQ ID NO: 1339	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1339	
AQSSSSRGPA Q	11
SEQ ID NO: 1340	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1340	
AQSSTVRNAA Q	11
SEQ ID NO: 1341	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1341	
AQSSVTHSSA Q	11
SEQ ID NO: 1342	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1342	
AQSSYQSNGA Q	11
SEQ ID NO: 1343	moltype = AA length = 11
FEATURE	Location/Qualifiers

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REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1343	
AQSTAARPVA Q	11
SEQ ID NO: 1344	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1344	
AQSTGHNTQA Q	11
SEQ ID NO: 1345	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1345	
AQSTGSSTSA Q	11
SEQ ID NO: 1346	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1346	
AQSTGTPNWA Q	11
SEQ ID NO: 1347	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1347	
AQSTHARDQ Q	11
SEQ ID NO: 1348	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1348	
AQSTIVYREA Q	11
SEQ ID NO: 1349	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1349	
AQSTMQNRIA Q	11
SEQ ID NO: 1350	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1350	

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AQSTNHGNNA Q	11
SEQ ID NO: 1351	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1351	
AQSTQIHAGA Q	11
SEQ ID NO: 1352	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1352	
AQSTQLRSGA Q	11
SEQ ID NO: 1353	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1353	
AQSTRALQPA Q	11
SEQ ID NO: 1354	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1354	
AQSTRSSDSA Q	11
SEQ ID NO: 1355	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1355	
AQSTRTAPEA Q	11
SEQ ID NO: 1356	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1356	
AQSTSNRPAA Q	11
SEQ ID NO: 1357	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1357	
AQSTSPPRPA Q	11
SEQ ID NO: 1358	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1358
AQSTSRLPAA Q                                         11

SEQ ID NO: 1359      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1359
AQSTSSHTPA Q                                         11

SEQ ID NO: 1360      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1360
AQSTSSRTSA Q                                         11

SEQ ID NO: 1361      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1361
AQSTSSRTTA Q                                         11

SEQ ID NO: 1362      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1362
AQTTTAPGQ Q                                         11

SEQ ID NO: 1363      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1363
AQSTVTAVGA Q                                         11

SEQ ID NO: 1364      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1364
AQSVGELPFA Q                                         11

SEQ ID NO: 1365      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1365
AQSVPAKGSA Q                                         11

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SEQ ID NO: 1366      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1366
AQSVRAGLNA Q                                              11

SEQ ID NO: 1367      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1367
AQSVRSPVTA Q                                              11

SEQ ID NO: 1368      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1368
AQSVRSSSDYA Q                                              11

SEQ ID NO: 1369      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1369
AQSVTRTVAA Q                                              11

SEQ ID NO: 1370      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1370
AQSYVSHSSA Q                                              11

SEQ ID NO: 1371      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1371
AQSYAPQLLA Q                                              11

SEQ ID NO: 1372      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1372
AQSYSNRSVA Q                                              11

SEQ ID NO: 1373      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein

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SEQUENCE: 1373          organism = synthetic construct
AQTAAVRSGA Q                         11

SEQ ID NO: 1374          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1374          organism = synthetic construct
AQTALKAVGA Q                         11

SEQ ID NO: 1375          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1375          organism = synthetic construct
AQTANTRAEA Q                         11

SEQ ID NO: 1376          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1376          organism = synthetic construct
AQTASQLSAA Q                         11

SEQ ID NO: 1377          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1377          organism = synthetic construct
AQTDRITISA Q                         11

SEQ ID NO: 1378          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1378          organism = synthetic construct
AQTDTRHATA Q                         11

SEQ ID NO: 1379          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1379          organism = synthetic construct
AQTERNTASA Q                         11

SEQ ID NO: 1380          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1380          organism = synthetic construct
AQTFHAVKEA Q                         11

SEQ ID NO: 1381          moltype = AA  length = 11
FEATURE           Location/Qualifiers

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REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1381	
AQTGSLAHGA Q	11
SEQ ID NO: 1382	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1382	
AQTIIGMRSAA Q	11
SEQ ID NO: 1383	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1383	
AQTIINKPNAA Q	11
SEQ ID NO: 1384	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1384	
AQTIISNSSGA Q	11
SEQ ID NO: 1385	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1385	
AQTIITRGTDAA Q	11
SEQ ID NO: 1386	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1386	
AQTLQNVNYA Q	11
SEQ ID NO: 1387	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1387	
AQTLSSSREA Q	11
SEQ ID NO: 1388	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1388	

-continued

AQTMGRNVSA Q	11
SEQ ID NO: 1389	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1389	
AQTQGNRTDA Q	11
SEQ ID NO: 1390	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1390	
AQTQHSTQSA Q	11
SEQ ID NO: 1391	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1391	
AQTQSAYGSA Q	11
SEQ ID NO: 1392	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1392	
AQTQSLRHDA Q	11
SEQ ID NO: 1393	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1393	
AQTQTDRHSA Q	11
SEQ ID NO: 1394	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1394	
AQTQTNIGRA Q	11
SEQ ID NO: 1395	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1395	
AQTRHSSDA Q	11
SEQ ID NO: 1396	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1396
AQTRSSSEAA Q                                         11

SEQ ID NO: 1397      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1397
AQTRSTIQA Q                                         11

SEQ ID NO: 1398      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1398
AQTSATYSGA Q                                         11

SEQ ID NO: 1399      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1399
AQTSGTRHEA Q                                         11

SEQ ID NO: 1400      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1400
AQTSHAPNNA Q                                         11

SEQ ID NO: 1401      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1401
AQTSHSSSSVA Q                                         11

SEQ ID NO: 1402      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1402
AQTSHVSSAA Q                                         11

SEQ ID NO: 1403      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1403
AQTSILRNEA Q                                         11

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SEQ ID NO: 1404      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1404
AQTSNNSGQA Q                                              11

SEQ ID NO: 1405      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1405
AQTSNYGATA Q                                              11

SEQ ID NO: 1406      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1406
AQTSQSRVEA Q                                              11

SEQ ID NO: 1407      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1407
AQTSRANDTA Q                                              11

SEQ ID NO: 1408      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1408
AQTSRSNETA Q                                              11

SEQ ID NO: 1409      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1409
AQTSTPNKIA Q                                              11

SEQ ID NO: 1410      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1410
AQTSYSTTTA Q                                              11

SEQ ID NO: 1411      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein

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SEQUENCE: 1411          organism = synthetic construct
AQTARNLEA Q                         11

SEQ ID NO: 1412          moltype = AA  length = 11
FEATURE
REGION
1..11
note = Synthetic
1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1412          organism = synthetic construct
AQTGILRDA Q                         11

SEQ ID NO: 1413          moltype = AA  length = 11
FEATURE
REGION
1..11
note = Synthetic
1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1413          organism = synthetic construct
AQTGTGTPRPA Q                         11

SEQ ID NO: 1414          moltype = AA  length = 11
FEATURE
REGION
1..11
note = Synthetic
1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1414          organism = synthetic construct
AQTGYSQAA Q                         11

SEQ ID NO: 1415          moltype = AA  length = 11
FEATURE
REGION
1..11
note = Synthetic
1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1415          organism = synthetic construct
AQTIRNAVA Q                         11

SEQ ID NO: 1416          moltype = AA  length = 11
FEATURE
REGION
1..11
note = Synthetic
1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1416          organism = synthetic construct
AQTTNITRTA Q                         11

SEQ ID NO: 1417          moltype = AA  length = 11
FEATURE
REGION
1..11
note = Synthetic
1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1417          organism = synthetic construct
AQTTSMGKVA Q                         11

SEQ ID NO: 1418          moltype = AA  length = 11
FEATURE
REGION
1..11
note = Synthetic
1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1418          organism = synthetic construct
AQTTSMSGHA Q                         11

SEQ ID NO: 1419          moltype = AA  length = 11
FEATURE
Location/Qualifiers

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-continued

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REGION          1..11
source          note = Synthetic
                1..11
                mol_type = protein
                organism = synthetic construct
SEQUENCE: 1419
AQTTSPKLPA Q                           11

SEQ ID NO: 1420      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
source            note = Synthetic
                1..11
                mol_type = protein
                organism = synthetic construct
SEQUENCE: 1420
AQTTSSSYNA Q                           11

SEQ ID NO: 1421      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
source            note = Synthetic
                1..11
                mol_type = protein
                organism = synthetic construct
SEQUENCE: 1421
AQTTSTHNAA Q                           11

SEQ ID NO: 1422      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
source            note = Synthetic
                1..11
                mol_type = protein
                organism = synthetic construct
SEQUENCE: 1422
AQTTSVRSTA Q                           11

SEQ ID NO: 1423      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
source            note = Synthetic
                1..11
                mol_type = protein
                organism = synthetic construct
SEQUENCE: 1423
AQTTTAGKVA Q                           11

SEQ ID NO: 1424      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
source            note = Synthetic
                1..11
                mol_type = protein
                organism = synthetic construct
SEQUENCE: 1424
AQTTTKFTPQ Q                           11

SEQ ID NO: 1425      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
source            note = Synthetic
                1..11
                mol_type = protein
                organism = synthetic construct
SEQUENCE: 1425
AQTVITASGA Q                           11

SEQ ID NO: 1426      moltype = AA  length = 11
FEATURE          Location/Qualifiers
REGION           1..11
source            note = Synthetic
                1..11
                mol_type = protein
                organism = synthetic construct
SEQUENCE: 1426

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AQTVQSHSTA Q	11
SEQ ID NO: 1427	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1427	
AQTVSSGRPA Q	11
SEQ ID NO: 1428	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1428	
AQTYNATRSA Q	11
SEQ ID NO: 1429	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1429	
AQVAGRNVSA Q	11
SEQ ID NO: 1430	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1430	
AQVAGTSQGA Q	11
SEQ ID NO: 1431	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1431	
AQVAGYSRDA Q	11
SEQ ID NO: 1432	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1432	
AQVATPSFLA Q	11
SEQ ID NO: 1433	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1433	
AQVFTNRSAA Q	11
SEQ ID NO: 1434	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1434
AQVGHGSLPA Q                                         11

SEQ ID NO: 1435          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1435
AQVGGSYSRDA Q                                         11

SEQ ID NO: 1436          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1436
AQVGTLSSSA Q                                         11

SEQ ID NO: 1437          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1437
AQVGVN VHGA Q                                         11

SEQ ID NO: 1438          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1438
AQVIRGLEQA Q                                         11

SEQ ID NO: 1439          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1439
AQVISRDSSA Q                                         11

SEQ ID NO: 1440          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1440
AQVISSHHSQ Q                                         11

SEQ ID NO: 1441          moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1441
AQVKANQATA Q                                         11

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SEQ ID NO: 1442      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1442
AQVLHASMSA Q                                              11

SEQ ID NO: 1443      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1443
AQVLHGSSYA Q                                              11

SEQ ID NO: 1444      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1444
AQVLRSNVMA Q                                              11

SEQ ID NO: 1445      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1445
AQVNLPVLLA Q                                              11

SEQ ID NO: 1446      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1446
AQVPGHSGLA Q                                              11

SEQ ID NO: 1447      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1447
AQVPGQSSLA Q                                              11

SEQ ID NO: 1448      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct
SEQUENCE: 1448
AQVPRSSTDQ Q                                              11

SEQ ID NO: 1449      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein

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SEQUENCE: 1449          organism = synthetic construct
AQVPRTGLTA Q                         11

SEQ ID NO: 1450          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1450          organism = synthetic construct
AQVPTSHSTA Q                         11

SEQ ID NO: 1451          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1451          organism = synthetic construct
AQVQSHGVNA Q                         11

SEQ ID NO: 1452          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1452          organism = synthetic construct
AQVQYGLLTA Q                         11

SEQ ID NO: 1453          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1453          organism = synthetic construct
AQVRGLYSDA Q                         11

SEQ ID NO: 1454          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1454          organism = synthetic construct
AQVRHSGMEA Q                         11

SEQ ID NO: 1455          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1455          organism = synthetic construct
AQVRPPNPSA Q                         11

SEQ ID NO: 1456          moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1456          organism = synthetic construct
AQVRSTLTDA Q                         11

SEQ ID NO: 1457          moltype = AA  length = 11
FEATURE           Location/Qualifiers

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REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1457	
AQVRSVGLDA Q	11
SEQ ID NO: 1458	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1458	
AQVRTPLFAA Q	11
SEQ ID NO: 1459	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1459	
AQVRTSYSDA Q	11
SEQ ID NO: 1460	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1460	
AQVSGIRGDA Q	11
SEQ ID NO: 1461	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1461	
AQVSGRSLSA Q	11
SEQ ID NO: 1462	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1462	
AQVSNSYLGA Q	11
SEQ ID NO: 1463	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1463	
AQVSNTYSGA Q	11
SEQ ID NO: 1464	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1464	

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AQVSRSESAA Q	11
SEQ ID NO: 1465 FEATURE REGION source SEQUENCE: 1465 AQVSSYPNSA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 1466 FEATURE REGION source SEQUENCE: 1466 AQVTGLRGIA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 1467 FEATURE REGION source SEQUENCE: 1467 AQVTHASLSA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 1468 FEATURE REGION source SEQUENCE: 1468 AQVTQLGRSA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 1469 FEATURE REGION source SEQUENCE: 1469 AQVTRSAAGEA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 1470 FEATURE REGION source SEQUENCE: 1470 AQVTSKNDLA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 1471 FEATURE REGION source SEQUENCE: 1471 AQVTTKTQLA Q	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic 1..11 mol_type = protein organism = synthetic construct
SEQ ID NO: 1472 FEATURE REGION	moltype = AA length = 11 Location/Qualifiers 1..11 note = Synthetic

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source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1472
AQVVANTSRA Q                                         11

SEQ ID NO: 1473      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1473
AQVVGGSNREA Q                                         11

SEQ ID NO: 1474      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1474
AQVVRSGNEA Q                                         11

SEQ ID NO: 1475      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1475
AQVVRSVNDA Q                                         11

SEQ ID NO: 1476      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1476
AQVVRTPNSA Q                                         11

SEQ ID NO: 1477      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1477
AQWGSHTGQ Q                                         11

SEQ ID NO: 1478      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1478
AQWLKSVAQ Q                                         11

SEQ ID NO: 1479      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source          1..11
               mol_type = protein
               organism = synthetic construct
SEQUENCE: 1479
AQWRHTSAEA Q                                         11

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SEQ ID NO: 1480      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1480
AQYAGNSGNA Q                                              11

SEQ ID NO: 1481      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1481
AQYASSSNNA Q                                              11

SEQ ID NO: 1482      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1482
AQYERNHNAA Q                                              11

SEQ ID NO: 1483      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1483
AQYKSSLSEA Q                                              11

SEQ ID NO: 1484      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1484
AQYLHGLQQA Q                                              11

SEQ ID NO: 1485      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1485
AQYNQIRGDA Q                                              11

SEQ ID NO: 1486      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1486
AQYNSSNFGA Q                                              11

SEQ ID NO: 1487      moltype = AA length = 11
FEATURE          Location/Qualifiers
REGION           1..11
note = Synthetic
source            1..11
mol_type = protein

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SEQUENCE: 1487          organism = synthetic construct
AQYPGNRMEA Q                         11

SEQ ID NO: 1488      moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1488          organism = synthetic construct
AQYRNTVQDA Q                         11

SEQ ID NO: 1489      moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1489          organism = synthetic construct
AQYRQSSSDA Q                         11

SEQ ID NO: 1490      moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1490          organism = synthetic construct
AQYRSGTQEA Q                         11

SEQ ID NO: 1491      moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1491          organism = synthetic construct
AQYTGSISVA Q                         11

SEQ ID NO: 1492      moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1492          organism = synthetic construct
AQYTSSVTGA Q                         11

SEQ ID NO: 1493      moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1493          organism = synthetic construct
AQYVASSPMA Q                         11

SEQ ID NO: 1494      moltype = AA  length = 11
FEATURE           Location/Qualifiers
REGION            1..11
note = Synthetic
source             1..11
mol_type = protein
organism = synthetic construct

SEQUENCE: 1494          organism = synthetic construct
AQYVGSGTAA Q                         11

SEQ ID NO: 1495      moltype = AA  length = 11
FEATURE           Location/Qualifiers

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REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1495	
AQYVHSNNAA Q	11
SEQ ID NO: 1496	moltype = AA length = 11
FEATURE	Location/Qualifiers
REGION	1..11
source	note = Synthetic
	1..11
	mol_type = protein
	organism = synthetic construct
SEQUENCE: 1496	
AQYYSSSGGA Q	11

What is claimed is:

1. A mutant Adeno-Associated Virus (AAV) capsid protein comprising at least 95% sequence identity to the wild-type AAV capsid protein, wherein the mutant AAV capsid protein comprises a sequence selected from the group consisting of SEQ ID NO: 2-1496.
2. The mutant AAV capsid protein of claim 1, wherein the mutant AAV capsid protein comprises 7-mer amino acid insertion sequence located between residues 588 and 589 in relation to the wild-type AAV capsid protein.
3. The mutant AAV capsid protein of claim 1, wherein the mutant AAV capsid protein comprises at least 95% sequence identity to the wild-type Adeno-Associated Virus serotype 9 (AAV9) capsid of SEQ ID NO: 1.
4. The mutant AAV capsid protein of claim 1, wherein the amino acids immediately preceding the 7-mer amino acid insertion sequence are -AQ-.
5. The mutant AAV capsid protein of claim 1, wherein the amino acids immediately following the 7-mer amino acid insertion sequence are -AQ-.
6. The mutant AAV capsid protein of claim 1, wherein 60 copies of the AAV capsid protein are assembled into the AAV capsid.
7. The mutant AAV capsid protein of claim 1, wherein the AAV capsid protein is present in VP1, VP2, and VP3 of the mutant AAV capsid.
8. The mutant AAV capsid protein of claim 1, wherein the mutant AAV capsid protein comprises a sequence selected from the group consisting of SEQ ID NO: 2-898.
9. The mutant AAV capsid protein of claim 8, further characterized by an increased transduction enrichment relative to the wild-type AAV9 when measured in brain tissue in a subject when delivered to the subject systemically.
10. The mutant AAV capsid protein of claim 9, wherein the mutant AAV capsid protein comprises a sequence selected from the group consisting of SEQ ID NO: 2-594.
11. The mutant AAV capsid protein of claim 1, wherein the mutant AAV capsid protein comprises a sequence selected from the group consisting of SEQ ID NO: 595-1496.
12. The mutant AAV capsid protein of claim 11, further characterized by an increased transduction enrichment relative to the wild-type AAV9 when measured in heart tissue in a subject when delivered to the subject systemically.
13. The mutant AAV capsid protein of claim 12, wherein the mutant AAV capsid protein comprises a sequence selected from the group consisting of SEQ ID NO: 899-1496.
14. The mutant AAV capsid protein of claim 1, wherein the mutant AAV capsid protein comprises a sequence selected from the group consisting of SEQ ID NO: 595-898.
15. The mutant AAV capsid protein of claim 14, further characterized by an increased transduction enrichment relative to the wild-type AAV9 when measured in brain tissue and heart tissue in a subject when delivered to the subject systemically.
16. An AAV capsid comprising a mutant AAV capsid protein comprising at least 95% sequence identity to the wild-type AAV capsid protein, wherein the mutant AAV capsid protein comprises a sequence selected from the group consisting of SEQ ID NO: 2-1496.
17. The AAV capsid of claim 16, wherein the AAV capsid is chimeric.
18. The AAV capsid of claim 17, wherein the capsid is isolated and purified.
19. The AAV capsid of claim 16, wherein the mutant AAV capsid protein comprises a sequence selected from the group consisting of SEQ ID NO: 2-898.
20. The AAV capsid of claim 19, further characterized by an increased transduction enrichment relative to the wild-type AAV9 when measured in brain tissue in a subject when delivered to the subject systemically.
21. The AAV capsid of claim 20, wherein the mutant AAV capsid protein comprises a sequence selected from the group consisting of SEQ ID NO: 2-594.
22. The AAV capsid of claim 16, wherein the mutant AAV capsid protein comprises a sequence selected from the group consisting of SEQ ID NO: 595-1496.
23. The AAV capsid of claim 22, further characterized by an increased transduction enrichment relative to the wild-type AAV9 when measured in heart tissue in a subject when delivered to the subject systemically.
24. The AAV capsid of claim 23, wherein the mutant AAV capsid protein comprises a sequence selected from the group consisting of SEQ ID NO: 899-1496.
25. The AAV capsid of claim 16, wherein the mutant AAV capsid protein comprises a sequence selected from the group consisting of SEQ ID NO: 595-898.
26. The AAV capsid of claim 25, further characterized by an increased transduction enrichment relative to the wild-type AAV9 when measured in brain tissue and heart tissue in a subject when delivered to the subject systemically.

27. A composition comprising an AAV capsid, wherein the AAV capsid comprises an AAV capsid protein comprising at least 95% sequence identity to the wild-type AAV capsid protein, wherein the mutant AAV capsid protein comprises a sequence selected from the group consisting of SEQ ID NO: 2-1496.

28. The composition of claim **27**, formulated for systematic administration to a subject.

29. The composition of claim **28**, wherein systematic administration of the composition results in expression of a gene product delivered by the AAV capsid.

30. The composition of claim **29**, wherein administration of the composition results in increased transduction enrichment relative to the wild-type AAV9 when measured in heart and/or brain.

31. A method of treating a disease or condition in a subject comprising administering a therapeutically effective amount of a composition of claim **27**.

32. The composition of claim **27**, for use in treating a disease or condition in a subject, the use comprising administering a therapeutically effective amount of a composition of claim **27**.

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