HBV-RYD-20

File name	**HBV-RYD-20.sam**
Ref name	**KX357637.1 Hepatitis B virus isolate MK20ETH, complete genome**
Ref len	**3182**
Program used	**Tanoti Assembler 1.0**
Total reads	**1468512**
Mapped reads	**69712 (4.75%)**
Unmapped reads	**1398800**
Mapped loan pairs	**0**
Average read length	**147nt**
Coverage	**3070nt (96.48%)**
Average depth	**3220 reads/site**
Average insert length	**10nt**

COVERAGE

Coverage by reads

SHANNON ENTROPY

Entropy of the reads


1
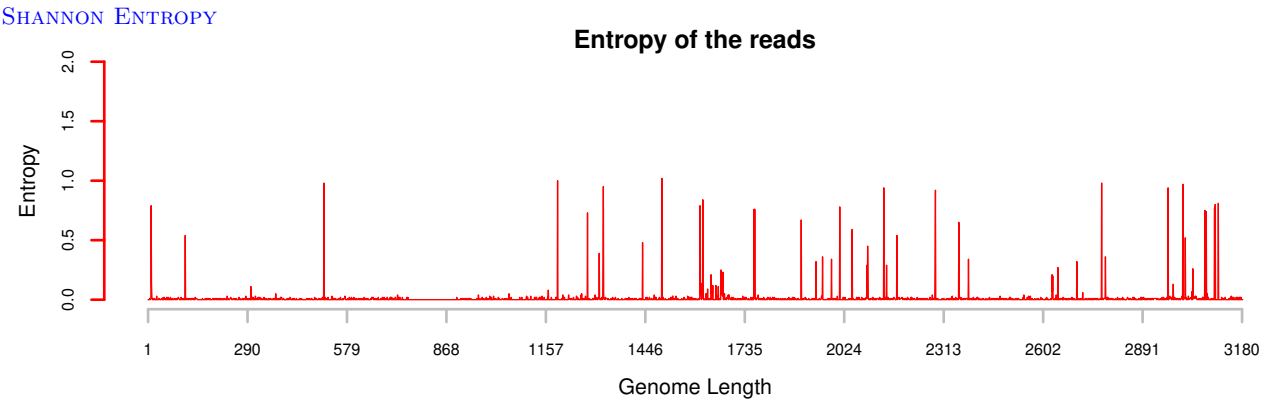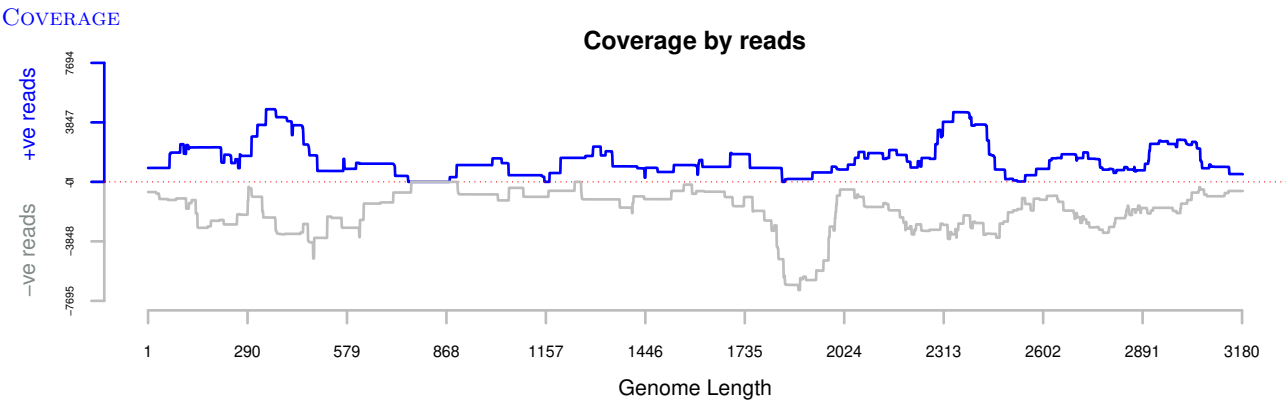
Consensus sequence

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   1        CTCCACAACG TTCCACCAAA CTCTGCAAGA TCCCAGAGTG AGAGGCCTGT ATTTCCCTGC TGGTGGCTCC
  70        AGTTCAGGAA CAGTAAACCC TGTTCCGACT ACTGTCTCTC ACATATCGTC AATCTTCTCG AGGATTGGGG
 140        ACCCTGCGCT GAACATGGAG AACATCACAT CAGGATTCCT AGGACCCCTG CTCGTGTTAC AGGCGGGGTT
 210        TTTCTTGTTG ACAAGAATCC TCACAATACC GCAGAGTCTA GACTCGTGGT GGACTTCTCT CAATTTTCTA
 280        GGGGGAACTA CCGTGTGTCT TGGCCAAAAT TCGCAGTCCC CAACCTCCAA TCACTCACCA ACCTCCTGTC
 350        CTCCAACTTG TCCTGGTTAT CGCTGGATGT GTCTGCGGCG TTTTATCATC TTCCTCTTCA TCCTGCTGCT
 420        ATGCCTCATC TTCTTGTTGG TTCTTCTGGA CTATCAAGGT ATGTTGCCCG TTTGTCCTCT AATTCCAGGA
 490        TCTTCAACCA CCAGCACGGG ATCATGCAGA ACCTGCACGA CTCCTGCTCA AGGAACCTCT ATGTATCCCT
 560        CCTGTTGCTG TACCAAACCT TCGGACGGAA ATTGCACCTG TATTCCCATC CCATCATCCT GGGCTTTCGG
 630        AAAATTCCTA TGGGAGTGGG CCTCAGCCCG TTTCTCCTGG CTCAGTTTAC TAGTGCCATT TGTTCAGTGG
 700        TTCGTAGGGC TTTCCCCCAT TGTTTGGCTT TCAGTTATAT GGATGATGTG GTATTGGGGG CCAAGNNNNN
 770        NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN
 840        NNNNNNNNNN NNNNNNNNNN NNNNNNNNNN NNNNNNNTGG CTATGTCAT TGGATGTTAT GGGTCATTGC
 910        CACAAGATCA CATCATACAG AAAATCAAAG AATGTTTTAG AAAACTTCCT GTTAACAGAC CTATTGATTG
 980        GAAAGTCTGT CAACGTATTG TGGGTCTTTT GGGTTTTGCT GCCCCTTTTA CACAATGTGG TTATCCTGCT
1050        TTAATGCCCT TGTATGCATG CATTCAATCT AAGCAGGCTT TCACTTTCTC GCCAACTTAC AAGGCCTTTC
1120        TGTGTAAACA ATACCTGAAC CTTTACCCCG TTGCCCGGCA ACGGCCAGGT CTGTGCCAAG TGTTTGCTGA
1190        CGCAACCCCC ACTGGCTGGG GCTTGGTTAT GGGCCATCAG CGCATGCGTG GAACCTTTTT GGCTCCTCTG
1260        CCGATCCATA CTGCGGAACT CCTAGCCGCT TGTTTTGCTC GCAGCAGGTC TGGAGCAAAC ATTCTCGGGA
1330        CGGATAACTC TGTTGTTCTC TCCCGCAAAT ATACATCGTT TCCATGGCTG CTAGGCTGTG CTGCCAACTG
1400        GATCCTGCGC GGGACGTCCT TTGTTTACGT CCCGTCGACG CTGAATCCCG CGGACGACCC TTCTCGGGGC
1470        CGCTTGGGAC TTTCTCGTCC CCTCCTCCGT CTGCCGTTTC GACCGACCAC GGGGCGCACC TCTCTTTACG
1540        CGGACTCCCC GTCTGTGCCT TCTCATCTGC CGGTCCGTGT GCACTTCGCT TCACCTCTGC ACGTCGCATG
1610        GAGACCACCG TGAACGCCCA CCAATTCTTG CCCAAGGTCT TACACAAGAG GACTCTTGGA CTCTCTGTAA
1680        TGTCAACGAC CGACCTTGAG GCATACTTCA AAGACTGTTT GTTTAAAGAC TGGGAGGAGT TGGGGGAGGA
1750        GATTAGGTTA ATGATCTTTG TACTAGGAGG CTGTAGGCAT AAATTGGTCT GCGCACCAGC ACCATGCAAC
1820        TTTTTCACCT CTGCCTAATC ATCTCTTGTT CATGTCCTAC TGTTCAAGCC TCCAAGCTGT GCCTTGGGTG
1890        GCTTTGGGAC ATGGACATTG ATCCTTATAA AGAATTTGGA GCTACTGTGG AGTTACTCTC GTTTTTGCCT
1960        TCTGACTTCT TTCCTTCAGT ACGAGATCTT CTAGATACCG CCTCAGCTCT ATATCGGGAA GCCTTAGAGT
2030        CTCCTGAGCA TTGTTCACCT CACCATACTG CACTCAGGCA AGCAATTCTT TGCTGGGGGG ACCTAATGAC
2100        TCTAGCCACC TGGGTGGGTG GTAATTTGGA AGATCCAATA TCCAGGGACC TAGTAGTCAG TTATGTTAAC
2170        ACTAATGTGG GCCTAAAGTT CAGGCAACTA TTGTGGTTTC ACATTTCTTG TCTCACTTTT GGAAGAGAAA
2240        CGGTCATAGA GTATTTGGTG TCTTTCGGAG TGTGGATTCG CACTCCTCCA GCTTATAGAC CACCAAATGC
2310        CCCTATCTTA TCAACACTTC CGGAGACTAC TGTTGTTAGA CGACGAGGCA GGTCCCCTAG AAGAAGAACT
2380        CCCTCGCCTC GCAGACGAAG GTCTCAATCG CCGCGTCGCA GAAGATCTCA ATCTCGGGAA TCTCAATGTT
2450        AGTATTCCTT GGACTCATAA GGTGGGCAAC TTTACGGGGC TTTATTCTTC TACTGTGCCT GTCTTTAACC
2520        CTCATTGGAA AACACCCTCT TTTCCCAATA TACATTTACA CCAAGACATT ATCAAAAAAT GTGAACAATT
2590        TGTAGGCCCA CTCACAGTCA ATGAGAAAAG AAGACTGCAA TTGATTATGC CTGCTAGGTT TTATCCAAAT
2660        GTTACCAAAT ATTTGCCATT GGATAAGGGT ATTAAACCTT ATTATCCAGA ACATCTAGTT AATCATTACT
2730        TCCAAACCAG ACATTATTTA CACACTCTAT GGAAGGCGGG TATACTATAT AAGAGAGAAA CAACACATAG
2800        CGCCTCATTT TGTGGGTCAC CATATTCTTG GGAACAAGAG CTACAGCATG GGGCAGAATC TTTCCACCAG
2870        CAATCCTCTG GGATTCTTTC CCGACCACCA GTTGGATCCA GCCTTCAGAG CAAACACCGC AAATCCAGAT
2940        TGGGACTTCA ATCCCAACAA GGACACCTGG CCGGACGCCA ACAAGGTAGG AGCTGGAGCA TTCGGGCTGG
3010        GATTCACCCC ACCGCACGGA GGCCTTTTGG GGTGGAGCCC TCAGGCTCAG GGCATACTAC AAAACCTTGCC
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3150        AGAAACACTC ATCCTCAGGC CATGCAGTGG AA
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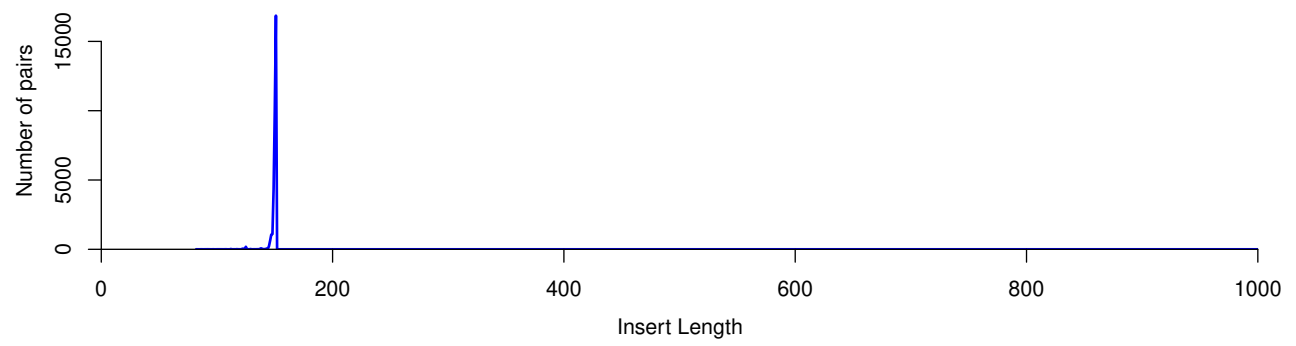
Genome Composition	
A	695 (21.84%)
T	863 (27.12%)
G	676 (21.24%)
C	836 (26.27%)
N	112 (3.52%)
Total Nucleotides	3182
GC%	49.25

Read quality

4
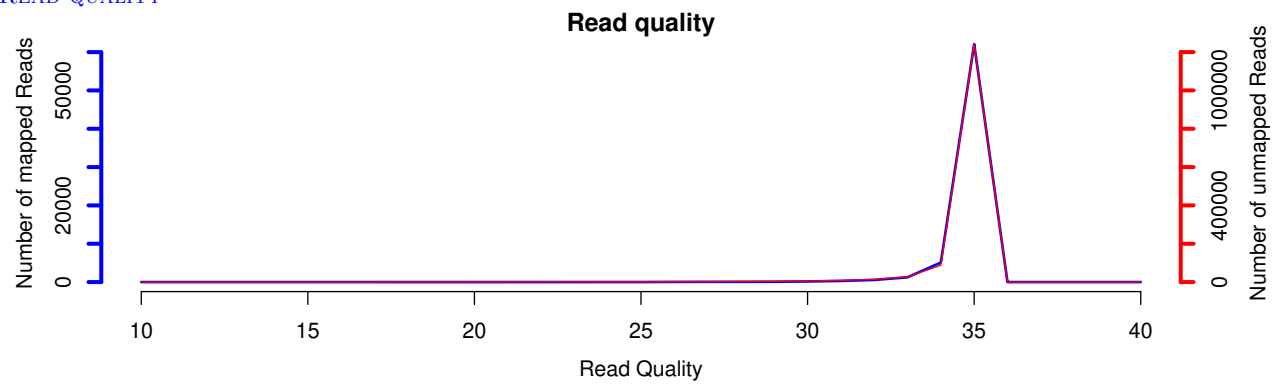
Amino acid variations

Protein	Position	Ref AA	Consensus AA	All AAs
P2	1	F	H	H::100.00(1558)
P2	2	F	N	N::99.87(1556)
P2	3	F	V	V::74.84(1166) L::23.11(360)
P2	4	F	P	P::100.00(1560)
P2	5	F	P	P::99.87(1558)
P2	6	F	N	N::99.87(1558)
P2	7	F	S	S::100.00(1560)
P2	8	F	A	A::99.76(1646)
P2	9	F	R	R::100.00(1656)
P2	10	F	S	S::99.88(1654)
P2	11	F	Q	Q::100.00(2002)
P2	12	F	S	S::100.00(2014)
P2	13	F	E	E::99.80(2010)
P2	14	F	R	R::100.00(2014)
P2	15	F	P	P::100.00(2014)
P2	16	F	V	V::99.90(2014)
P2	18	F	P	P::99.80(2012)
P2	19	F	C	C::99.80(2012)
P2	20	F	W	W::99.90(2068)
P2	21	F	W	W::99.80(2964)
P2	22	F	L	L::100.00(3062)
P2	23	F	Q	Q::99.93(3060)
P2	25	F	R	R::99.80(3058)
P2	26	F	N	N::100.00(3064)
P2	27	F	S	S::99.87(2960)
P2	28	F	K	K::99.87(2962)
P2	29	F	P	P::99.80(2958)
P2	30	F	C	C::99.86(2958)
P2	31	F	S	S::100.00(2962)
P2	32	F	D	D::99.71(3496)
P2	33	F	Y	Y::99.94(3504)
P2	34	F	C	C::100.00(2894)
P2	35	F	L	L::100.00(2894)
P2	36	F	S	S::87.54(2516) T::12.46(358)
P2	37	F	H	H::99.90(4106)
P2	38	F	I	I::99.95(4106)
P2	39	F	V	V::99.89(3486)
P2	40	F	N	N::99.89(3598)
P2	41	F	L	L::100.00(3602)
P2	42	F	L	L::99.94(3402)
P2	43	F	E	E::99.76(3396)
P2	44	F	D	D::99.94(3402)
P2	45	F	W	W::99.71(3394)
P2	46	F	G	G::99.94(3398)
P2	47	F	P	P::99.91(4272)
P2	48	F	C	C::100.00(5168)

P2	49	F	A	A::99.92(5198)
P2	50	F	E	E::99.96(5202)
P2	51	F	H	H::99.96(5202)
P2	52	F	G	G::99.96(5200)
P2	53	F	E	E::100.00(5202)
P2	54	F	H	H::100.00(5202)
P2	55	F	H	H::99.92(5198)
P2	56	F	I	I::99.85(5194)
P2	57	F	R	R::99.77(5190)
P2	58	F	I	I::99.92(5102)
P2	59	F	P	P::99.96(5104)
P2	60	F	R	R::99.92(5102)
P2	61	F	T	T::100.00(4742)
P2	62	F	P	P::100.00(4750)
P2	63	F	A	A::99.96(4748)
P2	64	F	R	R::100.00(4750)
P2	65	F	V	V::99.87(4746)
P2	66	F	T	T::99.96(4750)
P2	67	F	G	G::100.00(4750)
P2	68	F	G	G::100.00(4750)
P2	69	F	V	V::99.96(4692)
P2	71	F	L	L::99.95(3704)
P2	72	F	V	V::100.00(3706)
P2	73	F	D	D::99.95(3702)
P2	74	F	K	K::99.82(4504)
P2	75	F	N	N::100.00(4512)
P2	76	F	P	P::100.00(4510)
P2	77	F	H	H::99.96(4506)
P2	78	F	N	N::100.00(4506)
P2	79	F	T	T::99.96(4446)
P2	80	F	A	A::99.70(3956)
P2	81	F	E	E::100.00(3968)
P2	82	F	S	S::99.95(3966)
P2	83	F	R	R::99.90(3964)
P2	84	F	L	L::99.95(3966)
P2	85	F	V	V::99.95(4214)
P2	86	F	V	V::100.00(3570)
P2	87	F	D	D::100.00(2980)
P2	89	F	S	S::99.95(3774)
P2	90	F	Q	Q::100.00(3806)
P2	92	F	S	S::100.00(3806)
P2	93	F	R	R::99.89(3802)
P2	94	F	G	G::100.00(3806)
P2	95	F	N	N::99.89(3800)
P2	96	F	Y	Y::100.00(2896)
P2	97	F	R	R::99.90(2004)
P2	98	F	V	V::99.90(2094)
P2	99	F	S	S::100.00(2096)
P2	100	F	W	W::99.81(2092)
P2	101	F	P	P::99.79(3874)
P2	102	F	K	K::100.00(3894)

P2	104	F	A	A::99.74(3888)
P2	105	F	V	V::99.95(3896)
P2	106	F	P	P::99.91(4640)
P2	107	F	N	N::99.91(4646)
P2	108	F	L	L::99.74(4636)
P2	109	F	Q	Q::99.96(4646)
P2	110	F	S	S::99.91(4644)
P2	111	F	L	L::99.93(5596)
P2	112	F	T	T::99.77(5968)
P2	113	F	N	N::99.93(5978)
P2	114	F	L	L::99.97(5980)
P2	115	F	L	L::99.94(6998)
P2	116	F	S	S::99.94(7000)
P2	117	F	S	S::99.91(6998)
P2	118	F	N	N::99.91(6998)
P2	119	F	L	L::99.94(7000)
P2	120	F	S	S::99.94(7000)
P2	121	F	W	W::99.83(6992)
P2	122	F	L	L::99.94(6996)
P2	123	F	S	S::100.00(6616)
P2	124	F	L	L::99.95(7340)
P2	125	F	D	D::99.89(7508)
P2	126	F	V	V::100.00(7538)
P2	127	F	S	S::99.92(7538)
P2	128	F	A	A::99.81(7548)
P2	129	F	A	A::99.76(7546)
P2	131	F	Y	Y::99.89(7560)
P2	132	F	H	H::99.92(7532)
P2	133	F	L	L::100.00(7532)
P2	134	F	P	P::100.00(7302)
P2	135	F	L	L::99.92(7282)
P2	136	F	H	H::99.89(7274)
P2	137	F	P	P::99.95(7274)
P2	138	F	A	A::99.89(7260)
P2	139	F	A	A::99.97(6382)
P2	140	F	M	M::99.87(6376)
P2	141	F	P	P::99.94(7024)
P2	142	F	H	H::99.94(7022)
P2	143	F	L	L::99.97(7024)
P2	144	F	L	L::99.97(7022)
P2	145	F	V	V::99.94(7022)
P2	146	F	G	G::99.97(7024)
P2	147	F	S	S::100.00(7024)
P2	148	F	S	S::99.97(6914)
P2	149	F	G	G::99.97(6774)
P2	150	F	L	L::100.00(5142)
P2	151	F	S	S::99.92(5138)
P2	152	F	R	R::99.92(5132)
P2	153	F	Y	Y::99.92(5134)
P2	154	F	V	V::99.92(5132)
P2	155	F	A	A::99.93(6034)

P2	156	F	R	R::99.96(5608)
P2	157	F	L	L::99.96(5618)
P2	158	F	S	S::99.89(5614)
P2	159	F	S	S::99.96(5618)
P2	160	F	N	N::100.00(6668)
P2	161	F	S	S::99.85(5324)
P2	162	F	R	R::99.81(5322)
P2	163	F	I	I::99.85(5308)
P2	165	F	N	N::99.82(4320)
P2	166	F	H	H::99.95(4326)
P2	167	F	Q	Q::100.00(4328)
P2	168	F	H	H::99.95(4326)
P2	169	F	G	G::99.82(4320)
P2	170	F	I	I::59.01(2554) T::40.99(1774)
P2	171	F	M	M::99.86(4328)
P2	172	F	Q	Q::99.91(4328)
P2	173	F	N	N::99.93(2950)
P2	174	F	L	L::99.86(2948)
P2	175	F	H	H::100.00(2952)
P2	176	F	D	D::100.00(2952)
P2	177	F	S	S::100.00(2952)
P2	178	F	C	C::99.60(3022)
P2	179	F	S	S::100.00(3034)
P2	180	F	R	R::99.93(3032)
P2	181	F	N	N::99.93(3032)
P2	182	F	L	L::100.00(3034)
P2	183	F	Y	Y::100.00(3034)
P2	184	F	V	V::99.93(3032)
P2	185	F	S	S::99.93(3032)
P2	186	F	L	L::99.87(3030)
P2	187	F	L	L::100.00(3034)
P2	188	F	L	L::99.95(3650)
P2	189	F	L	L::100.00(3670)
P2	190	F	Y	Y::99.84(3804)
P2	191	F	Q	Q::99.84(3804)
P2	192	F	T	T::100.00(3810)
P2	194	F	G	G::99.95(3808)
P2	195	F	R	R::99.84(3804)
P2	196	F	K	K::100.00(3812)
P2	197	F	L	L::99.95(3810)
P2	198	F	H	H::99.95(3810)
P2	199	F	L	L::99.79(3804)
P2	200	F	Y	Y::100.00(3812)
P2	201	F	S	S::99.90(3808)
P2	202	F	H	H::100.00(4198)
P2	203	F	P	P::99.90(4192)
P2	204	F	I	I::99.95(4084)
P2	205	F	I	I::99.89(3630)
P2	206	F	L	L::99.89(3632)
P2	207	F	G	G::99.95(3638)
P2	209	F	R	R::99.84(2576)

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P2	212	F	P	P::99.92(2578)
P2	213	F	M	M::99.92(2578)
P2	214	F	G	G::100.00(2580)
P2	215	F	V	V::100.00(2578)
P2	216	F	G	G::99.92(2578)
P2	217	F	L	L::99.77(2574)
P2	218	F	S	S::99.84(2576)
P2	219	F	P	P::100.00(2582)
P2	221	F	L	L::100.00(2578)
P2	222	F	L	L::100.00(2580)
P2	223	F	A	A::99.77(2574)
P2	224	F	Q	Q::100.00(2580)
P2	226	F	T	T::100.00(2504)
P2	227	F	S	S::99.84(2500)
P2	228	F	A	A::99.92(2502)
P2	229	F	I	I::100.00(2504)
P2	230	F	C	C::99.92(2502)
P2	231	F	S	S::99.92(2502)
P2	232	F	V	V::100.00(2504)
P2	233	F	V	V::100.00(2504)
P2	234	F	R	R::99.84(2500)
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P2	236	F	A	A::99.76(2496)
P2	238	F	P	P::100.00(1748)
P2	239	F	H	H::99.81(1076)
P2	240	F	C	C::100.00(1078)
P2	241	F	L	L::100.00(1078)
P2	242	F	A	A::100.00(1076)
P2	244	F	S	S::99.81(1076)
P2	245	F	Y	Y::100.00(1076)
P2	246	F	M	M::99.81(1074)
P2	247	F	D	D::100.00(1076)
P2	248	F	D	D::100.00(1074)
P2	249	F	V	V::100.00(1074)
P2	250	F	V	V::100.00(1072)
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P2	252	F	G	G::100.00(690)
P2	253	F	A	A::100.00(688)
P2	254	F	K	K::100.00(688)
P2	293	F	G	G::100.00(306)
P2	294	F	Y	Y::100.00(306)
P2	295	F	V	V::100.00(306)
P2	296	F	I	I::100.00(306)
P2	297	F	G	G::100.00(306)
P2	298	F	C	C::100.00(306)
P2	299	F	Y	Y::99.82(1086)
P2	300	F	G	G::100.00(1596)
P2	301	F	S	S::100.00(1838)
P2	302	F	L	L::100.00(1892)

P2	303	F	P	P::99.89(1892)
P2	304	F	Q	Q::99.89(1894)
P2	305	F	D	D::99.79(1892)
P2	306	F	H	H::100.00(1896)
P2	307	F	I	I::99.89(1894)
P2	308	F	I	I::99.89(1894)
P2	309	F	Q	Q::99.89(1894)
P2	310	F	K	K::99.89(1894)
P2	311	F	I	I::99.89(1894)
P2	312	F	K	K::99.89(1894)
P2	313	F	E	E::100.00(1896)
P2	314	F	C	C::100.00(1896)
P2	316	F	R	R::100.00(1896)
P2	317	F	K	K::100.00(1898)
P2	318	F	L	L::99.89(1896)
P2	319	F	P	P::100.00(1898)
P2	320	F	V	V::99.58(1890)
P2	321	F	N	N::99.89(1896)
P2	322	F	R	R::100.00(1898)
P2	323	F	P	P::99.79(1894)
P2	324	F	I	I::100.00(1898)
P2	325	F	D	D::99.89(1896)
P2	326	F	W	W::99.89(1896)
P2	327	F	K	K::99.89(1896)
P2	328	F	V	V::99.89(1896)
P2	329	F	C	C::100.00(1898)
P2	330	F	Q	Q::99.79(1894)
P2	331	F	R	R::99.58(1890)
P2	332	F	I	I::100.00(1898)
P2	333	F	V	V::100.00(1898)
P2	334	F	G	G::99.91(2328)
P2	335	F	L	L::100.00(2330)
P2	336	F	L	L::99.91(2328)
P2	337	F	G	G::99.91(2328)
P2	339	F	A	A::99.78(2702)
P2	340	F	A	A::99.93(2712)
P2	341	F	P	P::100.00(2712)
P2	343	F	T	T::99.83(2406)
P2	344	F	Q	Q::100.00(2410)
P2	345	F	C	C::99.92(2408)
P2	346	F	G	G::100.00(2410)
P2	347	F	Y	Y::99.92(2408)
P2	348	F	P	P::100.00(2392)
P2	349	F	A	A::100.00(818)
P2	350	F	L	L::100.00(820)
P2	351	F	M	M::99.76(818)
P2	352	F	P	P::100.00(820)
P2	353	F	L	L::100.00(820)
P2	354	F	Y	Y::100.00(820)
P2	355	F	A	A::100.00(820)
P2	356	F	C	C::100.00(820)

P2	357	F	I	I::100.00(822)
P2	358	F	Q	Q::100.00(822)
P2	359	F	S	S::100.00(822)
P2	360	F	K	K::99.76(820)
P2	361	F	Q	Q::100.00(822)
P2	362	F	A	A::99.76(820)
P2	364	F	T	T::100.00(1394)
P2	366	F	S	S::99.86(1392)
P2	367	F	P	P::100.00(1400)
P2	368	F	T	T::100.00(1400)
P2	369	F	Y	Y::100.00(1400)
P2	370	F	K	K::99.86(1398)
P2	371	F	A	A::100.00(1400)
P2	373	F	L	L::100.00(1400)
P2	374	F	C	C::99.86(1398)
P2	375	F	K	K::99.86(1396)
P2	376	F	Q	Q::99.86(1396)
P2	377	F	Y	Y::100.00(1398)
P2	378	F	L	L::100.00(1396)
P2	379	F	N	N::99.71(1394)
P2	380	F	L	L::99.86(1396)
P2	381	F	Y	Y::100.00(1358)
P2	382	F	P	P::100.00(1300)
P2	383	F	V	V::100.00(1292)
P2	384	F	A	A::100.00(968)
P2	385	F	R	R::100.00(968)
P2	386	F	Q	Q::100.00(968)
P2	387	F	R	R::99.79(966)
P2	388	F	P	P::100.00(578)
P2	389	F	G	G::100.00(1150)
P2	390	F	L	L::100.00(1150)
P2	391	F	C	C::100.00(1150)
P2	392	F	Q	Q::100.00(1150)
P2	393	F	V	V::100.00(1150)
P2	395	F	A	A::99.65(1146)
P2	396	F	D	D::100.00(1150)
P2	397	F	A	A::99.83(1148)
P2	398	F	T	T::100.00(1150)
P2	399	F	P	P::100.00(1150)
P2	400	F	T	T::100.00(2128)
P2	401	F	G	G::99.91(2128)
P2	402	F	W	W::99.91(2126)
P2	403	F	G	G::99.81(2126)
P2	404	F	L	L::100.00(2130)
P2	405	F	V	V::100.00(2130)
P2	406	F	M	M::100.00(2130)
P2	407	F	G	G::99.62(2122)
P2	408	F	H	H::99.81(2126)
P2	409	F	Q	Q::99.91(2128)
P2	410	F	R	R::99.81(2126)
P2	411	F	M	M::100.00(2130)

P2	412	F	R	R::99.72(2124)
P2	413	F	G	G::100.00(1552)
P2	414	F	T	T::100.00(1552)
P2	416	F	L	L::100.00(1548)
P2	417	F	A	A::99.87(1550)
P2	418	F	P	P::100.00(1552)
P2	419	F	L	L::99.61(1546)
P2	420	F	P	P::99.42(2412)
P2	421	F	I	I::99.93(2672)
P2	422	F	H	H::99.93(2676)
P2	423	F	T	T::99.93(2678)
P2	424	F	A	A::99.93(2802)
P2	425	F	E	E::100.00(2804)
P2	426	F	L	L::100.00(2804)
P2	427	F	L	L::99.93(2802)
P2	428	F	A	A::100.00(2804)
P2	429	F	A	A::100.00(2804)
P2	430	F	C	C::99.93(2802)
P2	432	F	A	A::99.82(3406)
P2	433	F	R	R::99.59(3398)
P2	434	F	S	S::99.82(3406)
P2	435	F	R	R::99.94(3410)
P2	436	F	S	S::99.82(3406)
P2	437	F	G	G::92.50(3156) R::7.39(252)
P2	438	F	A	A::100.00(2844)
P2	439	F	N	N::99.86(2836)
P2	440	F	I	I::99.93(2838)
P2	441	F	L	L::63.10(1792) I::36.83(1046)
P2	442	F	G	G::99.86(2836)
P2	443	F	T	T::99.79(2832)
P2	444	F	D	D::99.87(3106)
P2	445	F	N	N::99.94(3110)
P2	446	F	S	S::100.00(3112)
P2	447	F	V	V::100.00(3108)
P2	448	F	V	V::99.94(3104)
P2	449	F	L	L::100.00(2780)
P2	450	F	S	S::99.81(2132)
P2	451	F	R	R::99.91(2134)
P2	452	F	K	K::99.81(2132)
P2	453	F	Y	Y::99.91(2134)
P2	454	F	T	T::100.00(2136)
P2	455	F	S	S::99.91(2134)
P2	457	F	P	P::100.00(2662)
P2	458	F	W	W::100.00(2668)
P2	459	F	L	L::99.93(2666)
P2	460	F	L	L::100.00(2668)
P2	461	F	G	G::100.00(2668)
P2	462	F	C	C::99.78(2662)
P2	463	F	A	A::100.00(2668)
P2	464	F	A	A::99.92(2664)
P2	465	F	N	N::100.00(2668)

P2	466	F	W	W::100.00(2668)
P2	467	F	I	I::99.92(2664)
P2	468	F	L	L::100.00(2664)
P2	469	F	R	R::99.91(2336)
P2	470	F	G	G::100.00(1934)
P2	471	F	T	T::99.90(1934)
P2	472	F	S	S::99.90(1934)
P2	474	F	V	V::100.00(1822)
P2	475	F	Y	Y::100.00(1822)
P2	476	F	V	V::99.89(1816)
P2	477	F	P	P::99.89(1812)
P2	478	F	S	S::100.00(1814)
P2	479	F	T	T::89.62(1624) A::10.38(188)
P2	480	F	L	L::100.00(1806)
P2	481	F	N	N::100.00(1386)
P2	482	F	P	P::99.70(2020)
P2	483	F	A	A::100.00(2026)
P2	484	F	D	D::100.00(2028)
P2	485	F	D	D::99.90(2026)
P2	486	F	P	P::99.90(2026)
P2	487	F	S	S::100.00(2028)
P2	488	F	R	R::100.00(2028)
P2	489	F	G	G::100.00(2028)
P2	490	F	R	R::99.51(2018)
P2	491	F	L	L::99.70(2022)
P2	492	F	G	G::99.80(2018)
P2	493	F	L	L::100.00(1760)
P2	494	F	S	S::100.00(1758)
P2	495	F	R	R::99.77(1756)
P2	496	F	P	P::99.89(1758)
P2	497	F	L	L::99.89(1756)
P2	498	F	L	L::100.00(1760)
P2	499	F	R	R::99.77(1756)
P2	500	F	L	L::100.00(1760)
P2	501	F	P	P::99.89(1758)
P2	503	F	R	R::100.00(1760)
P2	504	F	P	P::99.89(1758)
P2	505	F	T	T::99.89(1756)
P2	506	F	T	T::99.77(1754)
P2	507	F	G	G::100.00(1224)
P2	508	F	R	R::99.35(1216)
P2	509	F	T	T::99.84(1222)
P2	510	F	S	S::100.00(1674)
P2	511	F	L	L::99.64(1668)
P2	512	F	Y	Y::100.00(1674)
P2	513	F	A	A::99.76(1670)
P2	514	F	D	D::100.00(1670)
P2	515	F	S	S::100.00(1670)
P2	516	F	P	P::100.00(1670)
P2	517	F	S	S::100.00(1668)
P2	518	F	V	V::100.00(1670)

P2	519	F	P	P::99.84(1260)
P2	520	F	S	S::100.00(1262)
P2	521	F	H	H::100.00(1264)
P2	522	F	L	L::100.00(1264)
P2	523	F	P	P::99.84(1262)
P2	524	F	V	V::99.84(1262)
P2	525	F	R	R::99.84(1262)
P2	526	F	V	V::99.84(1262)
P2	527	F	H	H::100.00(1854)
P2	529	F	A	A::99.89(1852)
P2	530	F	S	S::100.00(1804)
P2	531	F	P	P::100.00(1622)
P2	532	F	L	L::100.00(1048)
P2	533	F	H	H::99.87(1578)
P2	534	F	V	V::99.90(1998)
P2	535	F	A	A::97.91(1964)
P2	536	F	W	W::99.40(2004)
P2	537	F	R	R::71.85(1128) K::27.13(426)
P2	538	F	P	P::100.00(1570)
S2	1	F	S	S::100.00(1556)
S2	2	F	T	T::99.87(1556)
S2	3	F	T	T::99.74(1554)
S2	5	F	H	H::100.00(1560)
S2	6	F	Q	Q::100.00(1560)
S2	7	F	T	T::99.87(1558)
S2	8	F	L	L::100.00(1560)
S2	9	F	Q	Q::99.76(1650)
S2	10	F	D	D::100.00(1656)
S2	11	F	P	P::99.76(1650)
S2	12	F	R	R::100.00(2010)
S2	13	F	V	V::100.00(2014)
S2	14	F	R	R::99.90(2012)
S2	15	F	G	G::99.80(2010)
S2	16	F	L	L::99.80(2010)
S2	17	F	Y	Y::100.00(2016)
S2	19	F	P	P::99.90(2014)
S2	20	F	A	A::99.81(2066)
S2	21	F	G	G::99.90(2070)
S2	22	F	G	G::99.80(2964)
S2	23	F	S	S::100.00(3062)
S2	24	F	S	S::99.93(3060)
S2	25	F	S	S::100.00(3064)
S2	26	F	G	G::99.87(3060)
S2	27	F	T	T::100.00(3064)
S2	28	F	V	V::99.93(2964)
S2	29	F	N	N::99.87(2962)
S2	30	F	P	P::99.80(2958)
S2	31	F	V	V::100.00(2962)
S2	32	F	P	P::100.00(3506)
S2	33	F	T	T::99.94(3504)
S2	34	F	T	T::99.94(3504)

S2	35	F	V	V::99.93(2892)
S2	36	F	S	S::100.00(2894)
S2	37	F	H	H::99.93(2872)
S2	38	F	I	I::99.81(4104)
S2	39	F	S	S::100.00(4066)
S2	40	F	S	S::100.00(3490)
S2	41	F	I	I::99.89(3598)
S2	43	F	S	S::99.94(3402)
S2	44	F	R	R::99.94(3402)
S2	45	F	I	I::99.94(3402)
S2	46	F	G	G::99.82(3398)
S2	47	F	D	D::99.91(4268)
S2	48	F	P	P::99.95(4274)
S2	49	F	A	A::99.96(5184)
S2	50	F	L	L::99.96(5200)
S2	51	F	N	N::100.00(5204)
S2	52	F	M	M::99.96(5202)
S2	53	F	E	E::99.85(5194)
S2	54	F	N	N::99.96(5200)
S2	55	F	I	I::100.00(5202)
S2	56	F	T	T::99.88(5196)
S2	57	F	S	S::99.96(5200)
S2	58	F	G	G::99.84(5098)
S2	60	F	L	L::100.00(5106)
S2	61	F	G	G::100.00(4744)
S2	62	F	P	P::100.00(4742)
S2	63	F	L	L::99.96(4748)
S2	64	F	L	L::99.96(4748)
S2	65	F	V	V::100.00(4750)
S2	66	F	L	L::99.92(4748)
S2	67	F	Q	Q::99.92(4748)
S2	68	F	A	A::99.96(4748)
S2	69	F	G	G::99.92(4748)
S2	72	F	L	L::99.95(3704)
S2	73	F	L	L::100.00(3706)
S2	74	F	T	T::100.00(3980)
S2	75	F	R	R::99.87(4506)
S2	76	F	I	I::100.00(4512)
S2	77	F	L	L::99.73(4498)
S2	78	F	T	T::99.91(4504)
S2	79	F	I	I::100.00(4496)
S2	80	F	P	P::99.91(4442)
S2	81	F	Q	Q::99.85(3962)
S2	82	F	S	S::100.00(3968)
S2	83	F	L	L::99.95(3966)
S2	84	F	D	D::99.90(3964)
S2	85	F	S	S::100.00(3966)
S2	86	F	W	W::99.91(4212)
S2	87	F	W	W::100.00(3524)
S2	88	F	T	T::100.00(2980)
S2	89	F	S	S::99.87(2972)

S2	90	F	L	L::100.00(3806)
S2	91	F	N	N::99.95(3804)
S2	93	F	L	L::100.00(3806)
S2	94	F	G	G::99.89(3802)
S2	95	F	G	G::99.74(3796)
S2	96	F	T	T::99.95(3802)
S2	97	F	T	T::99.93(2894)
S2	98	F	V	V::99.90(2006)
S2	99	F	C	C::100.00(2094)
S2	100	F	L	L::98.47(2064)
S2	101	F	G	G::99.89(3778)
S2	102	F	Q	Q::99.85(3886)
S2	103	F	N	N::100.00(3894)
S2	104	F	S	S::100.00(3898)
S2	105	F	Q	Q::99.90(3894)
S2	106	F	S	S::100.00(3898)
S2	107	F	P	P::99.78(4634)
S2	108	F	T	T::99.91(4644)
S2	109	F	S	S::99.78(4638)
S2	110	F	N	N::99.96(4646)
S2	111	F	H	H::99.91(4650)
S2	112	F	S	S::99.96(5596)
S2	113	F	P	P::99.87(5974)
S2	114	F	T	T::99.93(5978)
S2	115	F	S	S::99.97(6996)
S2	116	F	C	C::99.97(7000)
S2	117	F	P	P::99.94(7000)
S2	118	F	P	P::99.91(6998)
S2	119	F	T	T::99.89(6996)
S2	120	F	C	C::99.94(7000)
S2	121	F	P	P::99.94(7000)
S2	122	F	G	G::99.94(7000)
S2	123	F	Y	Y::99.94(6994)
S2	124	F	R	R::99.28(6372)
S2	125	F	W	W::99.86(7332)
S2	126	F	M	M::99.92(7530)
S2	127	F	C	C::99.95(7534)
S2	128	F	L	L::99.92(7538)
S2	129	F	R	R::99.66(7536)
S2	130	F	R	R::99.79(7552)
S2	132	F	I	I::99.89(7566)
S2	133	F	I	I::99.95(7534)
S2	135	F	L	L::99.95(7286)
S2	137	F	I	I::99.89(7274)
S2	138	F	L	L::99.86(7266)
S2	139	F	L	L::99.97(7254)
S2	140	F	L	L::99.97(6382)
S2	141	F	C	C::99.91(7022)
S2	142	F	L	L::99.94(7024)
S2	143	F	I	I::99.94(7022)
S2	145	F	L	L::100.00(7024)

S2	146	F	L	L::99.97(7024)
S2	147	F	V	V::99.89(7018)
S2	148	F	L	L::99.91(6922)
S2	149	F	L	L::99.94(6898)
S2	150	F	D	D::99.94(6772)
S2	151	F	Y	Y::99.96(5140)
S2	152	F	Q	Q::99.92(5132)
S2	153	F	G	G::99.92(5134)
S2	154	F	M	M::99.84(5128)
S2	155	F	L	L::99.92(5114)
S2	156	F	P	P::99.93(5856)
S2	157	F	V	V::99.93(5608)
S2	158	F	C	C::99.89(5614)
S2	159	F	P	P::99.86(5612)
S2	160	F	L	L::100.00(5622)
S2	161	F	I	I::100.00(5330)
S2	162	F	P	P::99.77(5318)
S2	163	F	G	G::99.89(5324)
S2	164	F	S	S::99.95(4324)
S2	165	F	S	S::100.00(4328)
S2	166	F	T	T::99.91(4324)
S2	167	F	T	T::100.00(4328)
S2	168	F	S	S::99.95(4326)
S2	169	F	T	T::99.86(4322)
S2	170	F	G	G::99.95(4326)
S2	171	F	S	S::58.96(2554) P::41.04(1778)
S2	172	F	C	C::99.86(4328)
S2	173	F	R	R::99.91(4328)
S2	174	F	T	T::99.93(2950)
S2	175	F	C	C::99.86(2948)
S2	176	F	T	T::100.00(2952)
S2	177	F	T	T::100.00(2952)
S2	178	F	P	P::100.00(2952)
S2	179	F	A	A::99.80(3028)
S2	180	F	Q	Q::99.93(3032)
S2	181	F	G	G::100.00(3034)
S2	182	F	T	T::99.93(3032)
S2	183	F	S	S::100.00(3034)
S2	184	F	M	M::100.00(3034)
S2	185	F	Y	Y::99.93(3032)
S2	186	F	P	P::100.00(3034)
S2	187	F	S	S::99.87(3030)
S2	188	F	C	C::100.00(3034)
S2	189	F	C	C::99.95(3664)
S2	190	F	C	C::99.91(4442)
S2	191	F	T	T::99.63(3796)
S2	192	F	K	K::100.00(3810)
S2	193	F	P	P::100.00(3810)
S2	194	F	S	S::99.95(3808)
S2	195	F	D	D::100.00(3810)
S2	196	F	G	G::99.90(3808)

S2	197	F	N	N::100.00(3812)
S2	198	F	C	C::99.95(3810)
S2	199	F	T	T::99.95(3810)
S2	200	F	C	C::99.69(3800)
S2	201	F	I	I::100.00(3812)
S2	202	F	P	P::99.90(3806)
S2	203	F	I	I::100.00(4198)
S2	204	F	P	P::99.86(4188)
S2	205	F	S	S::99.95(4080)
S2	206	F	S	S::99.89(3630)
S2	207	F	W	W::99.89(3632)
S2	208	F	A	A::99.95(3636)
S2	210	F	G	G::99.84(2576)
S2	211	F	K	K::99.92(2576)
S2	213	F	L	L::100.00(2580)
S2	214	F	W	W::100.00(2580)
S2	215	F	E	E::100.00(2580)
S2	216	F	W	W::99.92(2576)
S2	217	F	A	A::99.84(2576)
S2	218	F	S	S::99.84(2576)
S2	219	F	A	A::99.92(2578)
S2	220	F	R	R::99.92(2584)
S2	222	F	S	S::100.00(2578)
S2	223	F	W	W::99.77(2574)
S2	224	F	L	L::100.00(2580)
S2	225	F	S	S::100.00(2582)
S2	226	F	L	L::99.92(2502)
S2	227	F	L	L::99.92(2502)
S2	228	F	V	V::100.00(2504)
S2	229	F	P	P::99.84(2500)
S2	231	F	V	V::99.92(2502)
S2	232	F	Q	Q::99.76(2498)
S2	233	F	W	W::100.00(2504)
S2	235	F	V	V::99.68(2496)
S2	236	F	G	G::100.00(2504)
S2	237	F	L	L::100.00(2502)
S2	238	F	S	S::99.89(1818)
S2	239	F	P	P::100.00(1692)
S2	240	F	I	I::99.63(1074)
S2	241	F	V	V::100.00(1078)
S2	242	F	W	W::99.63(1074)
S2	243	F	L	L::100.00(1076)
S2	244	F	S	S::99.81(1076)
S2	245	F	V	V::100.00(1078)
S2	246	F	I	I::100.00(1076)
S2	247	F	W	W::99.81(1074)
S2	248	F	M	M::100.00(1076)
S2	249	F	M	M::100.00(1074)
S2	250	F	W	W::100.00(1074)
S2	251	F	Y	Y::99.81(1070)
S2	252	F	W	W::99.71(690)

S2	253	F	G	G::100.00(690)
S2	254	F	P	P::100.00(688)
X	1	F	M	M::100.00(2668)
X	2	F	A	A::99.93(2666)
X	3	F	A	A::100.00(2668)
X	4	F	R	R::100.00(2668)
X	5	F	L	L::99.93(2666)
X	6	F	C	C::99.93(2666)
X	7	F	C	C::99.93(2666)
X	8	F	Q	Q::100.00(2668)
X	9	F	L	L::100.00(2668)
X	10	F	D	D::99.93(2666)
X	11	F	P	P::99.92(2664)
X	12	F	A	A::99.91(2194)
X	13	F	R	R::99.90(1928)
X	14	F	D	D::99.90(1934)
X	15	F	V	V::99.79(1932)
X	16	F	L	L::99.90(1934)
X	17	F	C	C::100.00(1822)
X	18	F	L	L::100.00(1822)
X	19	F	R	R::99.78(1816)
X	20	F	P	P::100.00(1816)
X	21	F	V	V::100.00(1814)
X	22	F	D	D::89.51(1622) G::10.38(188)
X	23	F	A	A::100.00(1810)
X	24	F	E	E::100.00(1386)
X	25	F	S	S::99.86(1384)
X	26	F	R	R::100.00(2026)
X	27	F	G	G::99.80(2024)
X	28	F	R	R::100.00(2028)
X	29	F	P	P::99.70(2022)
X	31	F	S	S::99.80(2024)
X	32	F	G	G::100.00(2028)
X	33	F	P	P::99.80(2024)
X	34	F	L	L::99.80(2024)
X	35	F	G	G::99.80(2026)
X	36	F	T	T::100.00(1992)
X	38	F	S	S::100.00(1758)
X	39	F	S	S::100.00(1760)
X	40	F	P	P::99.89(1758)
X	41	F	P	P::53.47(940) S::46.42(816)
X	42	F	P	P::99.77(1756)
X	43	F	S	S::100.00(1760)
X	44	F	A	A::99.89(1758)
X	45	F	V	V::100.00(1760)
X	46	F	S	S::100.00(1760)
X	47	F	T	T::100.00(1760)
X	48	F	D	D::99.89(1758)
X	49	F	H	H::100.00(1758)
X	50	F	G	G::100.00(1224)
X	51	F	A	A::99.67(1220)

X	52	F	H	H::99.84(1222)
X	53	F	L	L::99.88(1672)
X	54	F	S	S::99.76(1670)
X	55	F	L	L::100.00(1674)
X	56	F	R	R::99.88(1672)
X	57	F	G	G::100.00(1670)
X	58	F	L	L::100.00(1670)
X	59	F	P	P::100.00(1670)
X	60	F	V	V::100.00(1668)
X	61	F	C	C::100.00(1670)
X	62	F	A	A::99.84(1262)
X	64	F	S	S::100.00(1264)
X	65	F	S	S::100.00(1264)
X	66	F	A	A::99.53(1258)
X	67	F	G	G::99.68(1260)
X	68	F	P	P::99.84(1262)
X	69	F	C	C::99.84(1262)
X	70	F	A	A::99.84(1262)
X	71	F	L	L::100.00(1858)
X	72	F	R	R::99.89(1854)
X	74	F	T	T::99.88(1620)
X	75	F	S	S::100.00(1048)
X	76	F	A	A::99.82(1116)
X	77	F	R	R::100.00(1806)
X	78	F	R	R::76.77(1540) C::22.53(452)
X	79	F	M	M::99.21(2000)
X	80	F	E	E::99.62(1564)
X	81	F	T	T::98.98(1554)
X	82	F	T	T::100.00(1580)
X	83	F	V	V::99.88(1606)
X	84	F	N	N::99.50(1600)
X	85	F	A	A::98.88(1590)
X	86	F	H	H::100.00(1608)
X	87	F	Q	Q::99.75(1604)
X	89	F	L	L::98.13(1578)
X	90	F	P	P::98.13(1578)
X	91	F	K	K::100.00(1608)
X	92	F	V	V::100.00(1608)
X	93	F	L	L::98.63(1586)
X	94	F	H	H::99.75(1604)
X	95	F	K	K::98.38(1582)
X	96	F	R	R::100.00(1608)
X	97	F	T	T::99.88(1606)
X	98	F	L	L::96.64(1554)
X	99	F	G	G::96.39(1550)
X	100	F	L	L::96.89(1560)
X	101	F	S	S::99.50(1602)
X	102	F	V	V::99.79(1922)
X	103	F	M	M::99.90(1956)
X	104	F	S	S::99.69(1952)
X	105	F	T	T::99.28(1944)

X	106	F	T	T::99.49(1948)
X	107	F	D	D::99.79(1944)
X	108	F	L	L::99.86(2778)
X	109	F	E	E::100.00(2782)
X	110	F	A	A::99.70(3332)
X	111	F	Y	Y::99.82(3358)
X	113	F	K	K::100.00(3372)
X	114	F	D	D::99.94(3370)
X	115	F	C	C::99.88(3368)
X	116	F	L	L::99.94(3370)
X	118	F	K	K::100.00(3372)
X	119	F	D	D::99.70(3362)
X	120	F	W	W::99.86(2770)
X	121	F	E	E::99.86(2772)
X	122	F	E	E::99.78(2770)
X	123	F	L	L::99.86(2772)
X	124	F	G	G::100.00(2774)
X	125	F	E	E::99.93(2764)
X	126	F	E	E::100.00(1886)
X	127	F	I	I::99.79(1882)
X	128	F	R	R::100.00(1886)
X	129	F	L	L::100.00(2816)
X	130	F	M	M::78.63(2186) K::21.29(592)
X	131	F	I	I::78.49(2182) V::21.22(590)
X	133	F	V	V::99.93(2776)
X	134	F	L	L::99.64(2770)
X	135	F	G	G::99.86(2776)
X	136	F	G	G::100.00(2780)
X	137	F	C	C::99.93(2778)
X	138	F	R	R::100.00(2784)
X	139	F	H	H::99.78(2776)
X	140	F	K	K::99.93(2786)
X	141	F	L	L::100.00(3400)
X	142	F	V	V::99.94(3402)
X	143	F	C	C::99.94(3402)
X	144	F	A	A::99.82(3400)
X	145	F	P	P::100.00(3406)
X	146	F	A	A::99.71(3396)
X	147	F	P	P::100.00(3406)
X	148	F	C	C::99.70(4054)
X	149	F	N	N::99.90(4062)
X	152	F	T	T::99.95(3718)
X	153	F	S	S::99.92(5086)
C	1	F	M	M::99.91(6474)
C	2	F	D	D::99.84(6304)
C	3	F	I	I::99.94(6310)
C	4	F	D	D::99.72(6298)
C	5	F	P	P::99.91(6530)
C	6	F	Y	Y::100.00(6540)
C	7	F	K	K::99.91(6534)
C	8	F	E	E::99.97(6538)

C	10	F	G	G::99.94(6534)
C	11	F	A	A::99.94(6532)
C	12	F	T	T::99.91(6952)
C	13	F	V	V::99.94(6952)
C	14	F	E	E::94.33(6560) D::5.64(392)
C	15	F	L	L::99.94(6328)
C	16	F	L	L::100.00(6332)
C	17	F	S	S::99.97(6330)
C	19	F	L	L::99.94(6350)
C	20	F	P	P::99.62(6332)
C	21	F	S	S::93.33(5932) T::6.64(422)
C	22	F	D	D::99.96(5692)
C	25	F	P	P::99.96(5692)
C	26	F	S	S::99.86(5680)
C	27	F	V	V::99.95(4182)
C	28	F	R	R::100.00(3504)
C	29	F	D	D::99.94(3502)
C	30	F	L	L::99.90(3878)
C	31	F	L	L::100.00(3880)
C	32	F	D	D::99.90(4124)
C	33	F	T	T::100.00(2918)
C	34	F	A	A::99.91(2344)
C	35	F	S	S::99.77(1704)
C	36	F	A	A::100.00(1684)
C	37	F	L	L::100.00(1684)
C	38	F	Y	Y::100.00(1292)
C	39	F	R	R::100.00(1292)
C	40	F	E	E::100.00(1292)
C	41	F	A	A::99.85(1290)
C	42	F	L	L::100.00(1292)
C	43	F	E	E::100.00(1292)
C	44	F	S	S::100.00(1292)
C	45	F	P	P::100.00(1292)
C	46	F	E	E::99.88(1606)
C	47	F	H	H::99.88(1606)
C	48	F	C	C::99.88(1606)
C	49	F	S	S::99.88(1606)
C	50	F	P	P::99.88(1608)
C	51	F	H	H::100.00(1610)
C	52	F	H	H::100.00(2150)
C	53	F	T	T::100.00(2592)
C	54	F	A	A::99.83(2362)
C	55	F	L	L::99.83(2362)
C	56	F	R	R::99.93(2892)
C	57	F	Q	Q::100.00(2900)
C	58	F	A	A::100.00(2900)
C	59	F	I	I::99.86(2896)
C	60	F	L	L::100.00(2900)
C	61	F	C	C::100.00(2784)
C	62	F	W	W::99.94(3086)
C	63	F	G	G::99.81(3112)

C	64	F	D	D::85.55(2676) E::9.34(292)
C	65	F	L	L::99.73(2976)
C	66	F	M	M::100.00(3486)
C	67	F	T	T::99.89(3480)
C	68	F	L	L::99.89(3480)
C	69	F	A	A::100.00(3484)
C	70	F	T	T::100.00(3484)
C	71	F	W	W::99.89(3480)
C	72	F	V	V::99.94(3482)
C	73	F	G	G::100.00(3484)
C	74	F	G	G::99.83(3478)
C	75	F	N	N::99.94(3484)
C	76	F	L	L::99.77(3476)
C	77	F	E	E::99.88(3470)
C	78	F	D	D::100.00(3470)
C	79	F	P	P::99.94(3106)
C	80	F	I	I::64.97(1858) T::34.90(998)
C	81	F	S	S::99.86(2856)
C	82	F	R	R::100.00(2858)
C	83	F	D	D::94.72(2836) N::5.08(152)
C	84	F	L	L::99.80(2988)
C	85	F	V	V::99.94(3350)
C	86	F	V	V::100.00(3900)
C	87	F	S	S::100.00(3898)
C	88	F	Y	Y::99.90(3898)
C	89	F	V	V::100.00(3904)
C	90	F	N	N::99.69(3892)
C	91	F	T	T::99.95(3900)
C	92	F	N	N::99.95(3900)
C	93	F	V	V::87.56(3140) M::12.38(444)
C	94	F	G	G::99.89(3582)
C	95	F	L	L::99.72(3576)
C	96	F	K	K::99.90(4032)
C	98	F	R	R::99.75(4028)
C	99	F	Q	Q::99.90(4032)
C	100	F	L	L::99.95(4370)
C	101	F	L	L::99.95(3904)
C	102	F	W	W::99.95(3978)
C	104	F	H	H::99.86(4322)
C	105	F	I	I::100.00(4172)
C	106	F	S	S::100.00(3800)
C	107	F	C	C::99.84(3794)
C	108	F	L	L::99.95(4314)
C	109	F	T	T::99.91(4328)
C	111	F	G	G::100.00(3676)
C	112	F	R	R::99.84(3670)
C	113	F	E	E::100.00(3674)
C	114	F	T	T::99.90(4068)
C	115	F	V	V::99.84(3728)
C	116	F	I	I::99.95(3734)
C	117	F	E	E::99.91(4692)

C	118	F	Y	Y::99.96(4698)
C	119	F	L	L::100.00(4700)
C	120	F	V	V::99.92(4710)
C	121	F	S	S::100.00(4716)
C	123	F	G	G::100.00(4714)
C	124	F	V	V::100.00(4714)
C	125	F	W	W::99.87(4578)
C	126	F	I	I::99.96(4584)
C	127	F	R	R::99.56(4566)
C	128	F	T	T::99.91(4582)
C	129	F	P	P::99.91(4582)
C	130	F	P	P::49.76(2280) Q::40.99(1878) S::9.25(424)
C	131	F	A	A::99.89(5532)
C	132	F	Y	Y::99.93(5534)
C	133	F	R	R::99.97(6436)
C	134	F	P	P::100.00(6414)
C	135	F	P	P::99.93(5590)
C	136	F	N	N::99.96(5592)
C	137	F	A	A::99.96(5680)
C	138	F	P	P::99.94(6656)
C	139	F	I	I::99.91(6660)
C	140	F	L	L::100.00(6666)
C	141	F	S	S::99.94(6660)
C	142	F	T	T::99.91(6662)
C	143	F	L	L::99.92(7566)
C	144	F	P	P::99.94(7122)
C	145	F	E	E::99.94(7124)
C	146	F	T	T::99.86(7252)
C	147	F	T	T::99.95(7274)
C	148	F	V	V::100.00(7904)
C	149	F	V	V::99.95(7560)
C	150	F	R	R::99.84(7536)
C	151	F	R	R::99.95(7614)
C	152	F	R	R::99.86(7186)
C	153	F	G	G::83.07(5978) C::16.87(1214)
C	154	F	R	R::99.81(7190)
C	155	F	S	S::99.83(7192)
C	156	F	P	P::100.00(7204)
C	157	F	R	R::99.91(6666)
C	158	F	R	R::99.94(6666)
C	159	F	R	R::99.94(6660)
C	160	F	T	T::99.85(6656)
C	161	F	P	P::99.97(6650)
C	162	F	S	S::93.78(6216) L::6.16(408)
C	163	F	P	P::99.94(6256)
C	164	F	R	R::99.82(6662)
C	165	F	R	R::99.88(6620)
C	166	F	R	R::99.94(6220)
C	167	F	R	R::99.81(6202)
C	168	F	S	S::100.00(6216)
C	169	F	Q	Q::99.97(6368)

C	170	F	S	S::99.94(6366)
C	171	F	P	P::99.75(6352)
C	172	F	R	R::99.87(6362)
C	173	F	R	R::99.87(6362)
C	174	F	R	R::99.97(6366)
C	175	F	R	R::99.87(6362)
C	176	F	S	S::99.97(6370)
C	177	F	Q	Q::99.92(7118)
C	178	F	S	S::99.97(7124)
C	179	F	R	R::99.94(6964)
C	180	F	E	E::99.93(6028)
C	181	F	S	S::99.93(6022)
C	182	F	Q	Q::99.88(5118)
P1	1	F	M	M::99.89(5588)
P1	2	F	P	P::99.93(5678)
P1	3	F	L	L::99.88(6654)
P1	4	F	S	S::99.94(6662)
P1	5	F	Y	Y::99.97(6662)
P1	6	F	Q	Q::99.85(6656)
P1	7	F	H	H::100.00(7506)
P1	9	F	R	R::99.94(7124)
P1	10	F	R	R::99.83(7122)
P1	11	F	L	L::99.72(7242)
P1	12	F	L	L::100.00(7278)
P1	13	F	L	L::99.95(7900)
P1	14	F	L	L::99.89(7540)
P1	15	F	D	D::99.92(7274)
P1	16	F	D	D::99.95(7626)
P1	17	F	E	E::83.10(5980) D::16.87(1214)
P1	18	F	A	A::99.75(7184)
P1	19	F	G	G::99.92(7198)
P1	20	F	P	P::99.97(7204)
P1	21	F	L	L::99.94(7200)
P1	22	F	E	E::100.00(6672)
P1	23	F	E	E::99.91(6658)
P1	24	F	E	E::99.91(6660)
P1	25	F	L	L::99.85(6654)
P1	26	F	P	P::99.97(6652)
P1	27	F	R	R::93.77(6196) C::6.17(408)
P1	28	F	L	L::99.90(6254)
P1	29	F	A	A::99.86(7078)
P1	30	F	D	D::99.82(6614)
P1	31	F	E	E::99.87(6218)
P1	32	F	G	G::99.97(6212)
P1	33	F	L	L::99.94(6212)
P1	34	F	N	N::99.94(6366)
P1	35	F	R	R::99.75(6354)
P1	36	F	R	R::99.84(6358)
P1	37	F	V	V::99.91(6364)
P1	38	F	A	A::99.87(6362)
P1	39	F	E	E::100.00(6368)

P1	40	F	D	D::99.91(6364)
P1	41	F	L	L::99.91(6366)
P1	42	F	N	N::99.97(7126)
P1	43	F	L	L::99.94(7120)
P1	44	F	G	G::99.94(6952)
P1	45	F	N	N::99.97(6032)
P1	46	F	L	L::99.83(6016)
P1	47	F	N	N::99.84(5116)
P1	48	F	V	V::99.96(5120)
P1	49	F	S	S::99.88(5074)
P1	50	F	I	I::99.96(5080)
P1	51	F	P	P::99.92(4982)
P1	52	F	W	W::99.90(4162)
P1	53	F	T	T::100.00(4164)
P1	54	F	H	H::99.95(4402)
P1	55	F	K	K::99.86(4400)
P1	56	F	V	V::99.95(4406)
P1	57	F	G	G::99.89(3484)
P1	58	F	N	N::99.89(3486)
P1	60	F	T	T::99.89(3502)
P1	61	F	G	G::100.00(3356)
P1	62	F	L	L::99.93(2740)
P1	63	F	Y	Y::99.85(2738)
P1	64	F	S	S::99.93(2740)
P1	65	F	S	S::100.00(2140)
P1	66	F	T	T::99.91(2138)
P1	67	F	V	V::99.72(2156)
P1	68	F	P	P::100.00(2162)
P1	69	F	V	V::99.91(2160)
P1	71	F	N	N::100.00(1938)
P1	72	F	P	P::99.90(1936)
P1	73	F	H	H::99.90(1936)
P1	74	F	W	W::99.89(1782)
P1	75	F	K	K::99.78(1780)
P1	76	F	T	T::100.00(1784)
P1	77	F	P	P::100.00(1784)
P1	78	F	S	S::100.00(1780)
P1	80	F	P	P::99.81(1072)
P1	81	F	N	N::99.81(1072)
P1	82	F	I	I::100.00(1856)
P1	83	F	H	H::99.89(1864)
P1	84	F	L	L::99.89(1864)
P1	85	F	H	H::99.57(1858)
P1	86	F	Q	Q::100.00(1860)
P1	87	F	D	D::99.68(1864)
P1	88	F	I	I::100.00(2276)
P1	89	F	I	I::100.00(2286)
P1	90	F	K	K::100.00(1518)
P1	91	F	K	K::99.87(1516)
P1	92	F	C	C::100.00(1518)
P1	93	F	E	E::99.90(1924)

P1	94	F	Q	Q::100.00(1920)
P1	96	F	V	V::100.00(1996)
P1	97	F	G	G::99.80(1990)
P1	98	F	P	P::99.80(1994)
P1	99	F	L	L::100.00(1998)
P1	100	F	T	T::100.00(1996)
P1	101	F	V	V::100.00(1996)
P1	102	F	N	N::99.90(1994)
P1	103	F	E	E::99.77(1746)
P1	104	F	K	K::100.00(1750)
P1	105	F	R	R::100.00(1750)
P1	106	F	R	R::99.91(2306)
P1	107	F	L	L::100.00(2308)
P1	108	F	Q	Q::95.97(2332)
P1	109	F	L	L::100.00(2414)
P1	110	F	I	I::99.92(2414)
P1	111	F	M	M::99.92(2414)
P1	112	F	P	P::99.59(2406)
P1	113	F	A	A::100.00(2652)
P1	114	F	R	R::100.00(2834)
P1	116	F	Y	Y::100.00(2834)
P1	117	F	P	P::99.93(2812)
P1	118	F	N	N::99.94(3076)
P1	119	F	V	V::100.00(3628)
P1	120	F	T	T::99.89(3640)
P1	121	F	K	K::99.95(3642)
P1	122	F	Y	Y::99.95(3642)
P1	123	F	L	L::100.00(3644)
P1	124	F	P	P::99.95(3642)
P1	125	F	L	L::99.89(3640)
P1	126	F	D	D::99.89(3640)
P1	127	F	K	K::99.84(3636)
P1	128	F	G	G::99.95(3644)
P1	129	F	I	I::99.95(3824)
P1	130	F	K	K::100.00(4084)
P1	131	F	P	P::100.00(3396)
P1	132	F	Y	Y::94.23(3200) H::5.77(196)
P1	133	F	Y	Y::100.00(3818)
P1	134	F	P	P::99.95(3822)
P1	135	F	E	E::99.95(3824)
P1	136	F	H	H::99.95(4188)
P1	137	F	L	L::100.00(3768)
P1	138	F	V	V::100.00(3768)
P1	139	F	N	N::100.00(4322)
P1	140	F	H	H::99.91(4328)
P1	141	F	Y	Y::99.95(4330)
P1	143	F	Q	Q::99.90(4110)
P1	144	F	T	T::99.95(4322)
P1	145	F	R	R::99.95(4438)
P1	146	F	H	H::100.00(4440)
P1	147	F	Y	Y::99.95(4438)

P1	148	F	L	L::99.86(4434)
P1	149	F	H	H::99.91(4436)
P1	150	F	T	T::99.91(4392)
P1	151	F	L	L::99.95(4394)
P1	152	F	W	W::99.86(4390)
P1	153	F	K	K::100.00(4370)
P1	154	F	A	A::99.95(4016)
P1	155	F	G	G::99.90(4010)
P1	156	F	I	I::57.80(2320) V::42.20(1694)
P1	157	F	L	L::99.95(3886)
P1	158	F	Y	Y::99.90(4078)
P1	159	F	K	K::99.75(4070)
P1	160	F	R	R::99.95(4080)
P1	161	F	E	E::99.85(4074)
P1	162	F	T	T::99.80(4072)
P1	163	F	T	T::100.00(3702)
P1	164	F	H	H::99.84(3750)
P1	165	F	S	S::99.95(3732)
P1	166	F	A	A::99.95(3734)
P1	167	F	S	S::99.94(3496)
P1	169	F	C	C::99.93(2928)
P1	170	F	G	G::100.00(2930)
P1	171	F	S	S::99.74(3102)
P1	172	F	P	P::100.00(3110)
P1	173	F	Y	Y::99.87(3106)
P1	174	F	S	S::100.00(3110)
P1	175	F	W	W::99.87(3106)
P1	176	F	E	E::99.87(3106)
P1	177	F	Q	Q::99.94(3108)
P1	178	F	E	E::100.00(3298)
P1	179	F	L	L::100.00(3126)
P1	180	F	Q	Q::100.00(2734)
P1	181	F	H	H::99.74(2330)
P1	182	F	G	G::99.92(2462)
P1	183	F	A	A::99.93(2906)
P1	184	F	E	E::99.86(2940)
P1	185	F	S	S::100.00(2574)
P1	187	F	H	H::99.92(2498)
P1	188	F	Q	Q::99.92(2452)
P1	189	F	Q	Q::99.92(2484)
P1	190	F	S	S::100.00(2558)
P1	191	F	S	S::100.00(2286)
P1	192	F	G	G::100.00(2288)
P1	193	F	I	I::100.00(2600)
P1	194	F	L	L::99.84(2422)
P1	195	F	S	S::99.84(2434)
P1	196	F	R	R::99.84(2436)
P1	197	F	P	P::99.92(2440)
P1	198	F	P	P::99.93(2860)
P1	199	F	V	V::99.93(2860)
P1	200	F	G	G::99.93(2956)

P1	201	F	S	S::99.88(3204)
P1	202	F	S	S::100.00(3920)
P1	203	F	L	L::99.91(4312)
P1	204	F	Q	Q::99.91(4316)
P1	205	F	S	S::99.91(4316)
P1	206	F	K	K::99.90(4132)
P1	207	F	H	H::99.90(4132)
P1	208	F	R	R::99.85(4130)
P1	209	F	K	K::99.95(4134)
P1	210	F	S	S::99.85(4130)
P1	211	F	R	R::100.00(4136)
P1	212	F	L	L::99.95(4342)
P1	213	F	G	G::99.95(4288)
P1	214	F	L	L::100.00(4290)
P1	215	F	Q	Q::99.95(4288)
P1	216	F	S	S::99.86(4284)
P1	217	F	Q	Q::99.91(4284)
P1	218	F	Q	Q::100.00(4308)
P1	219	F	G	G::99.81(4298)
P1	220	F	H	H::65.84(2718) P::34.06(1406)
P1	221	F	L	L::99.95(4126)
P1	222	F	A	A::99.66(4114)
P1	223	F	G	G::99.95(4126)
P1	224	F	R	R::99.66(4114)
P1	225	F	Q	Q::98.24(4244)
P1	226	F	Q	Q::99.86(4326)
P1	227	F	G	G::99.91(4320)
P1	228	F	R	R::99.95(4136)
P1	229	F	S	S::99.86(4264)
P1	230	F	W	W::99.92(4732)
P1	231	F	S	S::99.92(4732)
P1	232	F	I	I::100.00(4464)
P1	233	F	R	R::99.90(4116)
P1	234	F	A	A::99.76(4110)
P1	235	F	G	G::100.00(4120)
P1	236	F	I	I::99.85(4116)
P1	237	F	H	H::88.33(3556) Y::11.57(466)
P1	238	F	P	P::99.95(3856)
P1	239	F	T	T::100.00(3598)
P1	240	F	A	A::99.66(3556)
P1	241	F	R	R::99.89(3564)
P1	242	F	R	R::99.83(3558)
P1	243	F	P	P::100.00(3080)
P1	245	F	G	G::99.88(3278)
P1	246	F	V	V::99.94(3274)
P1	247	F	E	E::99.56(3192)
P1	248	F	P	P::99.93(2854)
P1	249	F	S	S::100.00(2852)
P1	250	F	G	G::99.92(2498)
P1	251	F	S	S::99.88(1702)
P1	252	F	G	G::99.89(1782)

P1	253	F	H	H::100.00(1376)
P1	254	F	T	T::99.85(1372)
P1	255	F	T	T::99.85(1372)
P1	256	F	N	N::79.16(1352) H::20.73(354)
P1	257	F	L	L::79.04(1350) R::20.73(354)
P1	258	F	A	A::99.56(1804)
P1	259	F	S	S::99.78(1808)
P1	260	F	K	K::100.00(1808)
P1	261	F	S	S::100.00(1974)
P1	262	F	A	A::99.90(1912)
P1	263	F	S	S::99.90(1910)
P1	264	F	C	C::99.90(1910)
P1	265	F	L	L::84.69(1604) R::8.24(156) H::7.07(134)
P1	266	F	H	H::75.50(1436) Y::24.50(466)
P1	267	F	Q	Q::100.00(1902)
P1	268	F	S	S::100.00(1902)
P1	269	F	P	P::75.50(1436) S::24.40(464)
P1	270	F	V	V::100.00(1902)
P1	271	F	R	R::100.00(1902)
P1	272	F	K	K::99.79(1898)
P1	273	F	A	A::99.89(1900)
P1	274	F	A	A::100.00(1900)
P1	275	F	Y	Y::99.88(1690)
P1	276	F	P	P::100.00(1692)
P1	277	F	S	S::100.00(1692)
P1	278	F	V	V::100.00(1690)
P1	279	F	S	S::99.82(1096)
P1	280	F	T	T::100.00(1096)
P1	282	F	E	E::99.82(1094)
P1	283	F	K	K::100.00(1096)
P1	284	F	H	H::99.82(1094)
P1	285	F	S	S::100.00(1096)
P1	286	F	S	S::99.82(1094)
P1	287	F	S	S::99.82(1094)
P1	288	F	G	G::99.82(1094)
P1	289	F	H	H::99.82(1094)
P1	290	F	A	A::99.82(1094)
P1	291	F	V	V::99.82(1094)
S1	1	F	M	M::99.74(2330)
S1	2	F	G	G::99.92(2540)
S1	3	F	Q	Q::100.00(2940)
S1	4	F	N	N::99.93(2940)
S1	5	F	L	L::100.00(2574)
S1	6	F	S	S::99.84(2536)
S1	7	F	T	T::99.92(2402)
S1	8	F	S	S::100.00(2454)
S1	9	F	N	N::100.00(2486)
S1	10	F	P	P::100.00(2558)
S1	11	F	L	L::99.91(2284)
S1	12	F	G	G::99.91(2286)
S1	15	F	P	P::100.00(2438)

S1	16	F	D	D::99.75(2434)
S1	17	F	H	H::99.92(2440)
S1	18	F	Q	Q::99.86(2858)
S1	19	F	L	L::99.93(2860)
S1	20	F	D	D::99.94(3192)
S1	21	F	P	P::99.82(3402)
S1	22	F	A	A::99.90(4062)
S1	24	F	R	R::99.91(4316)
S1	25	F	A	A::99.85(4130)
S1	26	F	N	N::99.81(4128)
S1	27	F	T	T::99.90(4132)
S1	28	F	A	A::99.85(4130)
S1	29	F	N	N::99.90(4132)
S1	30	F	P	P::99.81(4128)
S1	31	F	D	D::100.00(4136)
S1	32	F	W	W::99.95(4342)
S1	33	F	D	D::99.95(4288)
S1	35	F	N	N::99.91(4286)
S1	36	F	P	P::100.00(4290)
S1	37	F	N	N::99.95(4286)
S1	38	F	K	K::99.91(4304)
S1	39	F	D	D::99.91(4302)
S1	40	F	T	T::65.84(2718) P::34.06(1406)
S1	41	F	W	W::99.66(4114)
S1	42	F	P	P::99.85(4122)
S1	43	F	D	D::99.90(4124)
S1	44	F	A	A::99.81(4120)
S1	45	F	N	N::98.29(4258)
S1	46	F	K	K::99.82(4326)
S1	47	F	V	V::99.95(4136)
S1	48	F	G	G::100.00(4138)
S1	49	F	A	A::99.83(4728)
S1	50	F	G	G::100.00(4736)
S1	51	F	A	A::99.96(4734)
S1	53	F	G	G::99.81(4112)
S1	54	F	L	L::59.76(2462) P::40.24(1658)
S1	55	F	G	G::99.90(4118)
S1	57	F	T	T::99.84(3864)
S1	58	F	P	P::99.94(3604)
S1	59	F	P	P::99.94(3566)
S1	60	F	H	H::99.94(3566)
S1	61	F	G	G::99.89(3562)
S1	62	F	G	G::99.78(3556)
S1	63	F	L	L::99.48(3064)
S1	64	F	L	L::99.76(3274)
S1	65	F	G	G::99.88(3274)
S1	66	F	W	W::99.70(3270)
S1	67	F	S	S::99.63(3192)
S1	68	F	P	P::100.00(2856)
S1	69	F	Q	Q::99.93(2732)
S1	70	F	A	A::99.92(2496)

S1	71	F	Q	Q::99.88(1700)
S1	72	F	G	G::100.00(1788)
S1	73	F	I	I::99.85(1374)
S1	74	F	L	L::99.85(1372)
S1	75	F	Q	Q::79.02(1348) H::20.87(356)
S1	76	F	T	T::100.00(1708)
S1	77	F	L	L::79.27(1354) V::20.73(354)
S1	78	F	P	P::99.45(1802)
S1	79	F	A	A::99.67(1806)
S1	80	F	N	N::100.00(2048)
S1	81	F	P	P::100.00(1860)
S1	82	F	P	P::100.00(1914)
S1	83	F	P	P::100.00(1912)
S1	84	F	A	A::99.89(1892)
S1	85	F	S	S::84.75(1612) A::8.20(156) T::7.05(134)
S1	86	F	T	T::100.00(1902)
S1	87	F	N	N::100.00(1902)
S1	88	F	R	R::100.00(1902)
S1	89	F	Q	Q::100.00(1902)
S1	90	F	S	S::100.00(1902)
S1	91	F	G	G::100.00(1902)
S1	92	F	R	R::99.79(1898)
S1	93	F	Q	Q::99.89(1898)
S1	94	F	P	P::100.00(1868)
S1	95	F	T	T::99.65(1686)
S1	96	F	P	P::100.00(1692)
S1	97	F	L	L::100.00(1692)
S1	98	F	S	S::100.00(1556)
S1	99	F	P	P::99.82(1094)
S1	100	F	P	P::99.82(1094)
S1	101	F	L	L::99.64(1092)
S1	102	F	R	R::99.82(1094)
S1	103	F	N	N::100.00(1096)
S1	104	F	T	T::100.00(1096)
S1	105	F	H	H::100.00(1096)
S1	106	F	P	P::99.82(1094)
S1	107	F	Q	Q::99.82(1094)
S1	108	F	A	A::100.00(1096)
S1	109	F	M	M::99.82(1094)
S1	110	F	Q	Q::99.64(1092)

Meta data	
Assembly file:	HBV-RYD-20.sam
Annotation file:	/home3/vatt01s/Work/Project-150-HBV/Data/P150-1/Annotation/HBV.anno
Reference file:	KX357637.fa.
User name	ales01a
Hostname	Alpha
Location	/home2/ales01a/HBV/P150-5/HBV-RYD-20
Date/Time	Fri 22 Mar 09:25:03 GMT 2019