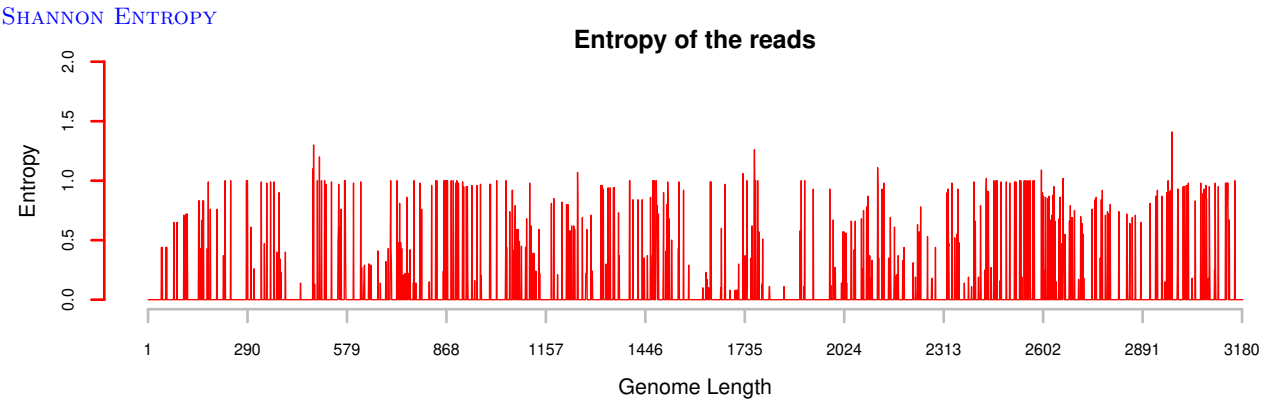
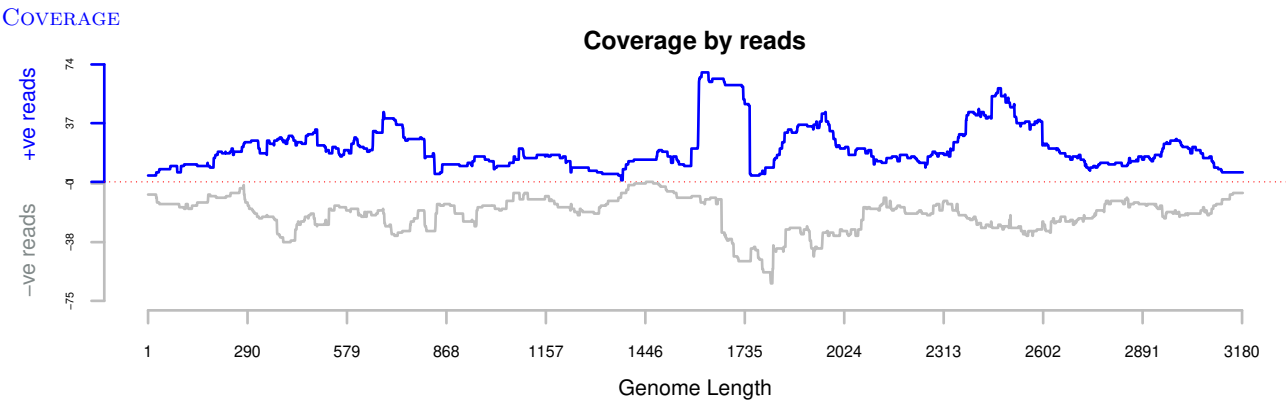


HBV-RYD-50

File name	HBV-RYD-50.sam
Ref name	KX357637.1 Hepatitis B virus isolate MK20ETH, complete genome
Ref len	3182
Program used	Tanoti Assembler 1.0
Total reads	120220
Mapped reads	916 (0.76%)
Unmapped reads	119304
Mapped loan pairs	12
Average read length	147nt
Coverage	3182nt (100.00%)
Average depth	41 reads/site
Average insert length	0nt



# CONSENSUS SEQUENCE

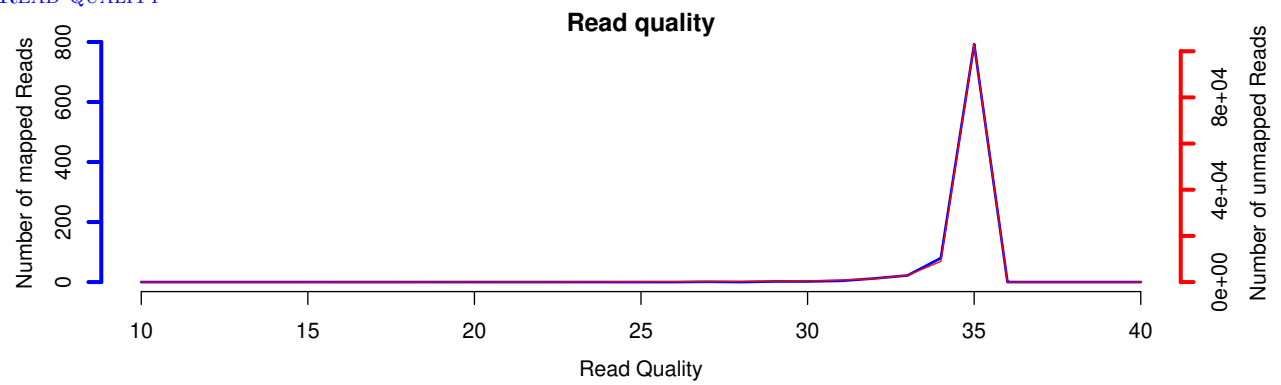
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140    ACCCTGCGCG GAACATGGAG AACATCACAT CAGGACTCCT AGGACCCCTG CTCGTGTTAC AGGCGGGGTT
210    TTTCTTGTG ACAAGAATCC TCACAATACC TCAGAGTCTA GACTCGTGGT GGACTTCTCT CAATTTTCTA
280    GGGGGAGCTC CCGTGTGTG TGGCCAAAAT TCGCAGTCCC CAACCTCCAA TCACTCACCA ACCTCCTGTC
350    CTCCAATTG TCCTGGCTAT CGCTGGATGT GTCTGCGGCG TTTTATCATC TTCCTCTTCA TCCTGCTGCT
420    ATGCTCATC TTCTTGTGG TTCTTCTGGA CTATCAAGGT ATGTTGCCCC TTTGTCCTCT AATTCCAGGA
490    TCTTCAACCA CCAGCACGGG ACCATGCCGA ACCTGCACGA CTCCTGCTCA AGGAACCTCT ATGTATCCCT
560    CATGTTGCTG TACCAAACCT TCGGACGGAA ATTGCACCTG TATTCCTATC CCATCATCCT GGGCTTTCGG
630    AAAATTCCTA TGGGAGTGGG CCTCAGCCCG TTTCTCCTGG CTCAGTTTAC TAGTGCCATT TGTTCACTGG
700    TTCGTGCGGC TTTCCCCCAC TGTCTGGCTT TCAGTTATAT GGATGATGTG GTATTGGGGG CCAAGTCTGT
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840    AACAAAACAA AAAGATGGGG ATATTCCCTA AATTTCATGG GCTATGTCAT TGGATGTCAT GGGTCATTGC
910    CACAAGATCA CATCATACAG AAAATCAAAG AATGTTTTAG AAAACTTCCT GTTAACAGGC CTATTGATTG
980    GAAAGTCTGT CAACGTATTG TGGGTCTTTT GGGTTTTGCT GCCCCTTTTA CACAATGTGG ATATCCTGCT
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1120   TGTGTAAACA ATACCTGAAC CTTTACCCCG TTGCCCAGCA ACGGCCAGGT CTGTGCCAAG TGTTTGCTGA
1190   TGCAACCCCC ACTGGCTGGG GCTTGGCCAT AGGCCATCAG CGCATGCGTG GAACCTTTGT GGCTCCTCTG
1260   CCGATCCATA CTGCGGAACT CCTAGCCGCT TGTTTTGCTC GCAGCAGGTC TGGAGCGAAA CTTATCGGGA
1330   CAGATAATTC TGTCGTTCTC TCAAGGAAAT ATACATCATT TCCATGGCTG CTAGGCTGTG CTGCCAACTG
1400   GATCCTGCGC GGGACGTCTT TGTTTACGT CCCGTGCGCG CTGAATCCTG CGGACGACCC TTCTCGGGGC
1470   CGCTTGAAC TCTCTCGTCC CTTTCTCCGT CTGCCGTTTC GACCGACCAC GGGGCGCACC TCTCTTACG
1540   CGGACTCCCC GTCTGTGCCT TCTCATCTGC CGGACCGTGT GCACTTCGCT TCACCTCTGC ACGTCGCATG
1610   GAGACCACCG TGAACGCCA CCAAATATTG CCCAAGGTCT TACATAAGAG GACTCTTGA CTCTCTGCAA
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1750   GATTAGATTA AGACTGTTG TTTTAGGAGG CTGTAGGCAT AAATTGGTCT GCGCACCAGC ACCATGCAAC
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2240   CAGTCATAGA GTATTTGGTG TCTTTCGGAG TGTGGATTCT CACTCCTCCA GCTTATAGAC CACCAAATGC
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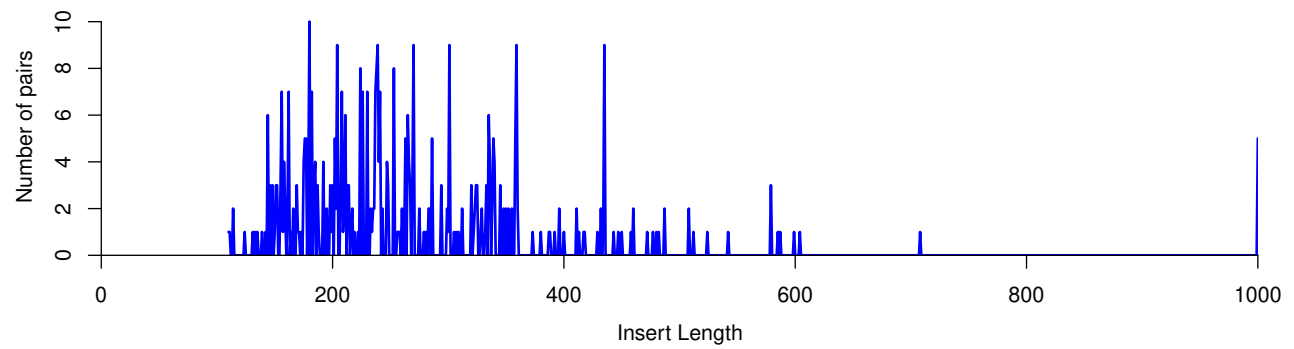
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Genome Composition	
A	735 (23.10%)
T	891 (28.00%)
G	691 (21.72%)
C	865 (27.18%)
N	0 (0.00%)
Total Nucleotides	3182
GC%	48.90

### READ QUALITY



### INSERT LENGTH DISTRIBUTION



AMINO ACID VARIATIONS

Protein	Position	Ref AA	Consensus AA	All AAs
P2	1	F	H	H::100.00(12)
P2	2	F	N	N::100.00(12)
P2	3	F	L	L::100.00(12)
P2	4	F	P	P::100.00(12)
P2	5	F	P	P::100.00(12)
P2	6	F	N	N::100.00(12)
P2	7	F	S	S::100.00(12)
P2	8	F	A	A::100.00(16)
P2	9	F	R	R::100.00(19)
P2	10	F	S	S::100.00(19)
P2	11	F	Q	Q::100.00(22)
P2	12	F	S	S::100.00(22)
P2	13	F	E	E::90.91(20) K::9.09(2)
P2	14	F	R	R::100.00(22)
P2	15	F	P	P::100.00(22)
P2	16	F	V	V::100.00(22)
P2	17	F	S	S::90.91(20) F::9.09(2)
P2	18	F	P	P::90.91(20) S::9.09(2)
P2	19	F	C	C::100.00(22)
P2	20	F	W	W::100.00(22)
P2	21	F	W	W::100.00(22)
P2	22	F	L	L::100.00(24)
P2	23	F	Q	Q::100.00(24)
P2	25	F	R	R::100.00(24)
P2	26	F	N	N::100.00(24)
P2	27	F	S	S::100.00(24)
P2	28	F	K	K::80.00(16) E::20.00(4)
P2	29	F	P	P::100.00(20)
P2	30	F	C	C::100.00(20)
P2	31	F	S	S::100.00(22)
P2	32	F	D	D::100.00(26)
P2	33	F	Y	Y::100.00(26)
P2	34	F	C	C::100.00(26)
P2	35	F	L	L::100.00(28)
P2	36	F	S	S::80.00(20) T::20.00(5)
P2	37	F	H	H::100.00(25)
P2	38	F	I	I::80.00(20) L::20.00(5)
P2	39	F	V	V::100.00(28)
P2	40	F	N	N::100.00(28)
P2	41	F	L	L::100.00(28)
P2	42	F	L	L::100.00(24)
P2	43	F	E	E::100.00(26)
P2	44	F	D	D::100.00(26)
P2	45	F	W	W::100.00(26)
P2	46	F	G	G::100.00(26)
P2	47	F	P	P::100.00(23)

P2	48	F	C	C::100.00(23)
P2	49	F	A	A::73.91(17) T::26.09(6)
P2	50	F	E	E::100.00(23)
P2	51	F	H	H::100.00(23)
P2	52	F	G	G::82.61(19) E::17.39(4)
P2	53	F	E	E::73.91(17) K::26.09(6)
P2	54	F	H	H::100.00(23)
P2	55	F	H	H::100.00(23)
P2	56	F	I	I::100.00(23)
P2	57	F	R	R::91.30(21) K::8.70(2)
P2	58	F	T	T::55.56(10) I::44.44(8)
P2	59	F	P	P::100.00(18)
P2	60	F	R	R::76.47(13) K::23.53(4)
P2	61	F	T	T::100.00(18)
P2	62	F	P	P::100.00(18)
P2	63	F	A	A::100.00(18)
P2	64	F	R	R::100.00(24)
P2	65	F	V	V::100.00(25)
P2	66	F	T	T::100.00(27)
P2	67	F	G	G::100.00(27)
P2	68	F	G	G::100.00(29)
P2	69	F	V	V::100.00(29)
P2	71	F	L	L::100.00(27)
P2	72	F	V	V::100.00(28)
P2	73	F	D	D::92.86(26) N::7.14(2)
P2	74	F	K	K::100.00(28)
P2	75	F	N	N::100.00(27)
P2	76	F	P	P::100.00(27)
P2	77	F	H	H::100.00(27)
P2	78	F	N	N::100.00(27)
P2	79	F	T	T::100.00(27)
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P2	81	F	E	E::100.00(28)
P2	82	F	S	S::100.00(24)
P2	83	F	R	R::100.00(24)
P2	84	F	L	L::100.00(26)
P2	85	F	V	V::100.00(26)
P2	86	F	V	V::100.00(26)
P2	87	F	D	D::100.00(26)
P2	89	F	S	S::100.00(23)
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P2	92	F	S	S::100.00(24)
P2	93	F	R	R::100.00(32)
P2	94	F	G	G::100.00(36)
P2	95	F	S	S::52.63(20) N::47.37(18)
P2	96	F	S	S::52.63(20) H::44.74(17)
P2	97	F	R	R::100.00(40)
P2	98	F	V	V::100.00(42)
P2	99	F	S	S::100.00(42)
P2	100	F	W	W::100.00(43)
P2	101	F	P	P::100.00(44)

P2	102	F	K	K::100.00(45)
P2	104	F	A	A::100.00(46)
P2	105	F	V	V::100.00(46)
P2	106	F	P	P::100.00(47)
P2	107	F	N	N::100.00(43)
P2	108	F	L	L::100.00(41)
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P2	110	F	S	S::100.00(40)
P2	111	F	L	L::100.00(40)
P2	112	F	T	T::100.00(40)
P2	113	F	N	N::100.00(40)
P2	114	F	L	L::100.00(40)
P2	115	F	L	L::100.00(37)
P2	116	F	S	S::100.00(48)
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P2	118	F	N	N::100.00(46)
P2	119	F	L	L::100.00(46)
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P2	121	F	W	W::100.00(46)
P2	122	F	L	L::100.00(46)
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P2	125	F	D	D::92.98(53) N::7.02(4)
P2	126	F	V	V::100.00(60)
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P2	128	F	A	A::93.65(59) T::6.35(4)
P2	129	F	A	A::100.00(62)
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P2	132	F	H	H::100.00(64)
P2	133	F	L	L::91.94(57) I::8.06(5)
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P2	137	F	P	P::100.00(67)
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P2	140	F	M	M::100.00(65)
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P2	142	F	H	H::100.00(56)
P2	143	F	L	L::100.00(53)
P2	144	F	L	L::100.00(50)
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P2	146	F	G	G::100.00(51)
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P2	150	F	L	L::100.00(49)
P2	151	F	S	S::100.00(48)
P2	152	F	R	R::100.00(46)
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P2	154	F	V	V::100.00(51)

P2	155	F	A	A::100.00(51)
P2	156	F	R	R::100.00(51)
P2	157	F	L	L::100.00(50)
P2	158	F	S	S::100.00(50)
P2	159	F	S	S::100.00(50)
P2	160	F	N	N::52.94(27) T::39.22(20) S::7.84(4)
P2	161	F	S	S::98.15(53)
P2	162	F	R	R::100.00(60)
P2	163	F	I	I::100.00(60)
P2	164	F	F	F::52.00(26) I::48.00(24)
P2	165	F	N	N::100.00(50)
P2	166	F	H	H::48.00(24) D::48.00(24)
P2	167	F	Q	Q::100.00(50)
P2	168	F	H	H::52.00(26) Y::48.00(24)
P2	169	F	G	G::100.00(50)
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P2	172	F	P	P::60.47(26) Q::39.53(17)
P2	173	F	N	N::100.00(47)
P2	174	F	L	L::100.00(47)
P2	175	F	H	H::100.00(35)
P2	176	F	D	D::100.00(35)
P2	177	F	S	S::100.00(35)
P2	178	F	C	C::100.00(36)
P2	179	F	S	S::100.00(40)
P2	180	F	R	R::100.00(37)
P2	181	F	N	N::100.00(37)
P2	182	F	L	L::100.00(36)
P2	183	F	Y	Y::100.00(36)
P2	184	F	V	V::72.73(24) E::15.15(5) I::12.12(4)
P2	185	F	S	S::84.38(27) T::15.62(5)
P2	186	F	L	L::96.88(31)
P2	187	F	M	M::78.12(25) L::21.88(7)
P2	188	F	L	L::100.00(33)
P2	189	F	L	L::100.00(33)
P2	190	F	Y	Y::52.78(19) F::47.22(17)
P2	191	F	Q	Q::52.78(19) K::41.67(15) R::5.56(2)
P2	192	F	T	T::100.00(38)
P2	194	F	G	G::100.00(36)
P2	195	F	R	R::100.00(36)
P2	196	F	K	K::100.00(35)
P2	197	F	L	L::100.00(41)
P2	198	F	H	H::100.00(41)
P2	199	F	L	L::100.00(41)
P2	200	F	Y	Y::100.00(45)
P2	201	F	S	S::100.00(44)
P2	202	F	H	H::100.00(44)
P2	203	F	P	P::100.00(40)
P2	204	F	I	I::100.00(43)
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P2	207	F	G	G::95.45(42)
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P2	210	F	K	K::100.00(40)
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P2	214	F	G	G::94.74(36) K::5.26(2)
P2	215	F	V	V::100.00(39)
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P2	219	F	P	P::100.00(53)
P2	221	F	L	L::100.00(51)
P2	222	F	L	L::100.00(49)
P2	223	F	A	A::100.00(49)
P2	224	F	Q	Q::100.00(49)
P2	226	F	T	T::100.00(49)
P2	227	F	S	S::100.00(48)
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P2	230	F	C	C::94.12(64) Y::5.88(4)
P2	231	F	S	S::100.00(68)
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P2	244	F	S	S::100.00(68)
P2	245	F	Y	Y::100.00(68)
P2	246	F	M	M::96.92(63)
P2	247	F	D	D::96.61(57)
P2	248	F	D	D::96.61(57)
P2	249	F	V	V::96.49(55)
P2	250	F	V	V::100.00(57)
P2	251	F	L	L::100.00(57)
P2	252	F	G	G::96.55(56)
P2	253	F	A	A::100.00(58)
P2	254	F	K	K::100.00(52)
P2	255	F	S	S::100.00(52)
P2	256	F	V	V::100.00(52)
P2	257	F	Q	Q::98.00(49)
P2	258	F	H	H::100.00(50)
P2	259	F	L	L::98.00(49)
P2	260	F	E	E::100.00(50)
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P2	262	F	L	L::100.00(45)

P2	263	F	Y	Y::57.78(26) F::42.22(19)
P2	264	F	T	T::100.00(46)
P2	265	F	A	A::77.78(35) S::22.22(10)
P2	266	F	V	V::100.00(45)
P2	267	F	T	T::100.00(44)
P2	268	F	N	N::100.00(42)
P2	270	F	L	L::100.00(47)
P2	271	F	L	L::100.00(47)
P2	272	F	S	S::97.87(46)
P2	273	F	L	L::100.00(47)
P2	274	F	G	G::100.00(47)
P2	275	F	I	I::100.00(47)
P2	276	F	H	H::100.00(49)
P2	277	F	L	L::100.00(36)
P2	278	F	N	N::100.00(25)
P2	279	F	P	P::100.00(25)
P2	280	F	N	N::100.00(19)
P2	281	F	K	K::100.00(19)
P2	282	F	T	T::100.00(19)
P2	283	F	K	K::100.00(21)
P2	284	F	R	R::100.00(21)
P2	285	F	W	W::100.00(26)
P2	286	F	G	G::96.00(24)
P2	287	F	Y	Y::100.00(25)
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P2	295	F	V	V::100.00(26)
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P2	297	F	G	G::100.00(30)
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P2	299	F	H	H::51.61(16) W::41.94(13) Y::6.45(2)
P2	300	F	G	G::100.00(31)
P2	301	F	S	S::100.00(30)
P2	302	F	L	L::100.00(30)
P2	303	F	P	P::100.00(30)
P2	304	F	Q	Q::100.00(30)
P2	305	F	D	D::56.67(17) E::43.33(13)
P2	306	F	H	H::100.00(35)
P2	307	F	I	I::100.00(35)
P2	308	F	I	I::62.86(22) R::37.14(13)
P2	309	F	Q	Q::62.86(22) M::37.14(13)
P2	310	F	K	K::100.00(37)
P2	311	F	I	I::100.00(37)
P2	312	F	K	K::100.00(36)
P2	313	F	E	E::61.76(21) D::38.24(13)
P2	314	F	C	C::100.00(34)
P2	316	F	R	R::97.37(37)

P2	317	F	K	K::100.00(44)
P2	318	F	L	L::100.00(34)
P2	319	F	P	P::100.00(32)
P2	320	F	V	V::100.00(32)
P2	321	F	N	N::100.00(32)
P2	322	F	R	R::100.00(32)
P2	323	F	P	P::100.00(32)
P2	324	F	I	I::100.00(31)
P2	325	F	D	D::100.00(31)
P2	326	F	W	W::100.00(29)
P2	327	F	K	K::100.00(29)
P2	328	F	V	V::100.00(29)
P2	329	F	C	C::100.00(29)
P2	330	F	Q	Q::100.00(28)
P2	331	F	R	R::100.00(28)
P2	332	F	I	I::100.00(28)
P2	333	F	V	V::100.00(28)
P2	334	F	G	G::100.00(28)
P2	335	F	L	L::100.00(23)
P2	336	F	L	L::100.00(26)
P2	337	F	G	G::100.00(26)
P2	339	F	A	A::100.00(27)
P2	340	F	A	A::100.00(27)
P2	341	F	P	P::100.00(28)
P2	343	F	T	T::100.00(27)
P2	344	F	Q	Q::100.00(27)
P2	345	F	C	C::100.00(27)
P2	346	F	G	G::92.59(25) E::7.41(2)
P2	347	F	Y	Y::90.91(20) C::9.09(2)
P2	348	F	P	P::100.00(22)
P2	349	F	A	A::100.00(22)
P2	350	F	L	L::79.17(19) *:20.83(5)
P2	351	F	M	M::100.00(24)
P2	352	F	P	P::100.00(24)
P2	353	F	L	L::100.00(24)
P2	354	F	Y	Y::100.00(19)
P2	355	F	A	A::76.19(16) V::14.29(3) T::9.52(2)
P2	356	F	C	C::90.48(19) Y::9.52(2)
P2	357	F	T	T::85.71(18) I::14.29(3)
P2	358	F	Q	Q::100.00(21)
P2	359	F	S	S::100.00(21)
P2	360	F	K	K::100.00(32)
P2	361	F	Q	Q::100.00(32)
P2	362	F	A	A::100.00(32)
P2	364	F	T	T::100.00(22)
P2	366	F	S	S::100.00(22)
P2	367	F	P	P::100.00(22)
P2	368	F	T	T::100.00(26)
P2	369	F	Y	Y::100.00(26)
P2	370	F	K	K::100.00(26)
P2	371	F	A	A::84.62(22) T::15.38(4)

P2	373	F	L	L::100.00(26)
P2	374	F	C	C::100.00(26)
P2	375	F	K	K::96.15(25)
P2	376	F	Q	Q::100.00(26)
P2	377	F	Y	Y::100.00(28)
P2	378	F	L	L::100.00(28)
P2	379	F	N	N::96.43(27)
P2	380	F	L	L::100.00(28)
P2	381	F	Y	Y::100.00(28)
P2	382	F	P	P::100.00(28)
P2	383	F	V	V::100.00(28)
P2	384	F	A	A::100.00(25)
P2	385	F	R	R::100.00(25)
P2	386	F	Q	Q::100.00(26)
P2	387	F	R	R::100.00(25)
P2	388	F	P	P::100.00(25)
P2	389	F	G	G::100.00(28)
P2	390	F	L	L::100.00(28)
P2	391	F	C	C::100.00(29)
P2	392	F	Q	Q::100.00(29)
P2	393	F	V	V::72.41(21) M::27.59(8)
P2	395	F	A	A::100.00(31)
P2	396	F	D	D::100.00(31)
P2	397	F	A	A::100.00(33)
P2	398	F	T	T::100.00(33)
P2	399	F	P	P::100.00(31)
P2	400	F	T	T::100.00(31)
P2	401	F	G	G::74.19(23) S::25.81(8)
P2	402	F	W	W::100.00(32)
P2	403	F	G	G::100.00(32)
P2	404	F	L	L::100.00(28)
P2	405	F	A	A::78.57(22) V::21.43(6)
P2	406	F	I	I::75.86(22) M::24.14(7)
P2	407	F	G	G::100.00(29)
P2	408	F	H	H::100.00(29)
P2	409	F	Q	Q::100.00(20)
P2	410	F	R	R::80.00(16) H::20.00(4)
P2	411	F	M	M::100.00(26)
P2	412	F	R	R::84.62(22) H::15.38(4)
P2	413	F	G	G::85.71(24) K::14.29(4)
P2	414	F	T	T::100.00(28)
P2	416	F	V	V::67.86(19) R::28.57(8)
P2	417	F	A	A::100.00(30)
P2	418	F	P	P::100.00(26)
P2	419	F	L	L::100.00(26)
P2	420	F	P	P::100.00(27)
P2	421	F	I	I::100.00(28)
P2	422	F	H	H::100.00(28)
P2	423	F	T	T::100.00(28)
P2	424	F	A	A::92.86(26)
P2	425	F	E	E::85.71(24) K::14.29(4)

P2	426	F	L	L::100.00(28)
P2	427	F	L	L::100.00(26)
P2	428	F	A	A::100.00(26)
P2	429	F	A	A::80.77(21) T::19.23(5)
P2	430	F	C	C::96.15(25)
P2	432	F	A	A::100.00(27)
P2	433	F	R	R::100.00(27)
P2	434	F	S	S::100.00(27)
P2	435	F	R	R::100.00(26)
P2	436	F	S	S::100.00(26)
P2	437	F	G	G::100.00(22)
P2	438	F	A	A::100.00(21)
P2	439	F	K	K::61.90(13) N::38.10(8)
P2	440	F	L	L::65.00(13) I::35.00(7)
P2	441	F	I	I::65.00(13) L::35.00(7)
P2	442	F	G	G::100.00(20)
P2	443	F	T	T::100.00(19)
P2	444	F	D	D::100.00(19)
P2	445	F	N	N::100.00(17)
P2	446	F	S	S::100.00(17)
P2	447	F	V	V::100.00(17)
P2	448	F	V	V::100.00(17)
P2	449	F	L	L::100.00(17)
P2	450	F	S	S::100.00(17)
P2	451	F	R	R::100.00(17)
P2	452	F	K	K::100.00(17)
P2	453	F	Y	Y::100.00(17)
P2	454	F	T	T::100.00(17)
P2	455	F	S	S::100.00(14)
P2	456	F	F	F::92.86(13) Y::7.14(1)
P2	457	F	P	P::100.00(14)
P2	458	F	W	W::100.00(8)
P2	459	F	L	L::100.00(8)
P2	460	F	L	L::100.00(15)
P2	461	F	G	G::100.00(15)
P2	462	F	C	C::100.00(15)
P2	463	F	A	A::100.00(16)
P2	464	F	A	A::100.00(16)
P2	465	F	N	N::100.00(13)
P2	466	F	W	W::53.33(8) *:46.67(7)
P2	467	F	I	I::100.00(15)
P2	468	F	L	L::100.00(15)
P2	469	F	R	R::100.00(15)
P2	470	F	G	G::100.00(15)
P2	471	F	T	T::100.00(15)
P2	472	F	S	S::100.00(15)
P2	474	F	V	V::100.00(15)
P2	475	F	Y	Y::100.00(15)
P2	476	F	V	V::100.00(15)
P2	477	F	P	P::100.00(15)
P2	478	F	S	S::100.00(15)

P2	479	F	A	A::100.00(15)
P2	480	F	L	L::100.00(15)
P2	481	F	N	N::100.00(15)
P2	482	F	P	P::100.00(14)
P2	483	F	A	A::100.00(14)
P2	484	F	D	D::100.00(14)
P2	485	F	D	D::100.00(14)
P2	486	F	P	P::100.00(14)
P2	487	F	S	S::100.00(14)
P2	488	F	R	R::92.86(13) Q::7.14(1)
P2	489	F	G	S::50.00(7) G::50.00(7)
P2	490	F	R	R::53.33(8) H::46.67(7)
P2	491	F	L	L::100.00(15)
P2	492	F	K	K::53.33(8) G::46.67(7)
P2	493	F	L	L::76.47(13) I::23.53(4)
P2	494	F	S	S::80.00(16) Y::20.00(4)
P2	495	F	R	R::100.00(22)
P2	496	F	P	P::100.00(22)
P2	497	F	L	L::100.00(23)
P2	498	F	L	L::100.00(22)
P2	499	F	R	R::63.64(14) H::31.82(7)
P2	500	F	L	L::100.00(22)
P2	501	F	P	P::100.00(22)
P2	503	F	R	R::54.55(12) Q::45.45(10)
P2	504	F	P	P::100.00(22)
P2	505	F	T	T::100.00(22)
P2	506	F	T	T::100.00(18)
P2	507	F	G	G::88.89(16) K::11.11(2)
P2	508	F	R	R::100.00(18)
P2	509	F	T	T::100.00(22)
P2	510	F	S	S::100.00(23)
P2	511	F	L	L::100.00(23)
P2	512	F	Y	Y::100.00(23)
P2	513	F	A	A::100.00(23)
P2	514	F	D	D::57.14(12) V::42.86(9)
P2	515	F	S	S::100.00(21)
P2	516	F	P	P::100.00(21)
P2	517	F	S	S::100.00(21)
P2	518	F	V	V::100.00(21)
P2	519	F	P	P::100.00(20)
P2	520	F	S	S::100.00(20)
P2	521	F	H	H::100.00(20)
P2	522	F	L	L::100.00(20)
P2	523	F	P	P::100.00(20)
P2	524	F	D	D::100.00(20)
P2	525	F	R	R::100.00(20)
P2	526	F	V	V::100.00(19)
P2	527	F	H	H::100.00(30)
P2	529	F	A	A::100.00(30)
P2	530	F	S	S::100.00(30)
P2	531	F	P	P::100.00(30)

P2	532	F	L	L::100.00(30)
P2	533	F	H	H::100.00(44)
P2	534	F	V	V::100.00(74)
P2	535	F	A	A::100.00(77)
P2	536	F	W	W::100.00(79)
P2	537	F	R	R::98.78(81)
P2	538	F	P	P::100.00(82)
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S2	1	F	S	S::100.00(12)
S2	2	F	T	T::100.00(12)
S2	3	F	T	T::100.00(12)
S2	5	F	H	H::100.00(12)
S2	6	F	Q	Q::100.00(12)
S2	7	F	T	T::100.00(12)
S2	8	F	L	L::100.00(12)
S2	9	F	Q	Q::100.00(16)
S2	10	F	D	D::100.00(19)
S2	11	F	P	P::100.00(19)
S2	12	F	R	R::100.00(22)
S2	13	F	V	V::100.00(22)
S2	14	F	R	R::90.91(20) K::9.09(2)
S2	15	F	G	G::100.00(22)
S2	16	F	L	L::100.00(22)
S2	17	F	Y	Y::100.00(22)
S2	18	F	L	L::90.91(20) F::9.09(2)
S2	19	F	P	P::100.00(22)
S2	20	F	A	A::100.00(22)
S2	21	F	G	G::100.00(22)
S2	22	F	G	G::100.00(22)
S2	23	F	S	S::100.00(24)
S2	24	F	S	S::100.00(24)
S2	25	F	S	S::100.00(24)
S2	26	F	G	G::100.00(24)
S2	27	F	T	T::100.00(24)
S2	28	F	V	V::100.00(24)
S2	29	F	N	N::100.00(20)
S2	30	F	P	P::100.00(20)
S2	31	F	V	V::100.00(22)
S2	32	F	P	P::100.00(22)
S2	33	F	T	T::100.00(26)
S2	34	F	T	T::100.00(26)
S2	35	F	V	V::80.77(21) A::19.23(5)
S2	36	F	S	S::100.00(28)
S2	37	F	H	H::80.00(20) L::20.00(5)
S2	38	F	T	T::80.00(20) I::20.00(5)
S2	39	F	S	S::100.00(25)
S2	40	F	S	S::100.00(28)
S2	41	F	I	I::100.00(28)
S2	43	F	S	S::100.00(24)
S2	44	F	R	R::100.00(26)
S2	45	F	I	I::100.00(26)
S2	46	F	G	G::100.00(26)

S2	47	F	D	D::100.00(26)
S2	48	F	P	P::100.00(23)
S2	49	F	A	A::100.00(23)
S2	50	F	R	R::73.91(17) P::26.09(6)
S2	51	F	N	N::91.30(21) S::8.70(2)
S2	52	F	M	M::100.00(23)
S2	53	F	E	E::82.61(19) K::17.39(4)
S2	54	F	N	N::73.91(17) S::26.09(6)
S2	55	F	I	I::100.00(23)
S2	56	F	T	T::100.00(23)
S2	57	F	S	S::100.00(23)
S2	58	F	G	G::90.00(18) R::10.00(2)
S2	59	F	L	L::55.56(10) F::44.44(8)
S2	60	F	L	L::100.00(17)
S2	61	F	G	G::77.78(14) R::22.22(4)
S2	62	F	P	P::100.00(18)
S2	63	F	L	L::100.00(18)
S2	64	F	L	L::100.00(18)
S2	65	F	V	V::100.00(24)
S2	66	F	L	L::100.00(26)
S2	67	F	Q	Q::77.78(21) P::22.22(6)
S2	68	F	A	A::100.00(27)
S2	69	F	G	G::100.00(29)
S2	72	F	L	L::100.00(27)
S2	73	F	L	L::100.00(28)
S2	74	F	T	T::100.00(28)
S2	75	F	R	R::50.00(14) K::50.00(14)
S2	76	F	I	I::100.00(27)
S2	77	F	L	L::100.00(27)
S2	78	F	T	T::100.00(27)
S2	79	F	I	I::100.00(27)
S2	80	F	P	P::100.00(26)
S2	81	F	Q	Q::100.00(26)
S2	82	F	S	S::100.00(28)
S2	83	F	L	L::100.00(24)
S2	84	F	D	D::100.00(26)
S2	85	F	S	S::100.00(26)
S2	86	F	W	W::100.00(26)
S2	87	F	W	W::100.00(26)
S2	88	F	T	T::100.00(26)
S2	89	F	S	S::100.00(23)
S2	90	F	L	L::100.00(23)
S2	91	F	N	N::100.00(23)
S2	93	F	L	L::100.00(24)
S2	94	F	G	G::100.00(32)
S2	95	F	G	G::100.00(38)
S2	96	F	A	A::52.63(20) T::47.37(18)
S2	97	F	P	P::52.63(20) T::47.37(18)
S2	98	F	V	V::100.00(40)
S2	99	F	C	C::100.00(42)
S2	100	F	R	R::88.10(37) P::9.52(4)



S2	101	F	G	G::100.00(43)
S2	102	F	Q	Q::100.00(44)
S2	103	F	N	N::95.56(43)
S2	104	F	S	S::100.00(46)
S2	105	F	Q	Q::100.00(46)
S2	106	F	S	S::100.00(46)
S2	107	F	P	P::100.00(43)
S2	108	F	T	T::100.00(43)
S2	109	F	S	S::100.00(41)
S2	110	F	N	N::56.10(23) S::43.90(18)
S2	111	F	H	H::100.00(40)
S2	112	F	S	S::100.00(40)
S2	113	F	P	P::90.00(36) L::10.00(4)
S2	114	F	T	T::100.00(40)
S2	115	F	S	S::100.00(38)
S2	116	F	C	C::100.00(47)
S2	117	F	P	P::100.00(48)
S2	118	F	P	P::100.00(46)
S2	119	F	I	I::56.52(26) T::43.48(20)
S2	120	F	C	C::100.00(46)
S2	121	F	P	P::100.00(46)
S2	122	F	G	G::100.00(45)
S2	123	F	Y	Y::100.00(49)
S2	124	F	R	R::100.00(50)
S2	125	F	W	W::92.00(46) *:8.00(4)
S2	126	F	M	M::100.00(60)
S2	127	F	C	C::68.33(41) *:31.67(19)
S2	128	F	L	L::100.00(61)
S2	129	F	R	R::96.83(61)
S2	130	F	R	R::100.00(62)
S2	132	F	I	I::100.00(63)
S2	133	F	I	I::100.00(63)
S2	135	F	L	L::100.00(62)
S2	137	F	I	I::100.00(67)
S2	138	F	L	L::100.00(67)
S2	139	F	L	L::100.00(66)
S2	140	F	L	L::100.00(65)
S2	141	F	C	C::100.00(63)
S2	142	F	L	L::100.00(63)
S2	143	F	I	I::100.00(53)
S2	145	F	L	L::100.00(52)
S2	146	F	L	L::100.00(50)
S2	147	F	V	V::100.00(52)
S2	148	F	L	L::98.00(49)
S2	149	F	L	L::100.00(49)
S2	150	F	D	D::100.00(49)
S2	151	F	Y	Y::100.00(49)
S2	152	F	Q	Q::100.00(46)
S2	153	F	G	G::100.00(46)
S2	154	F	M	M::100.00(51)
S2	155	F	L	L::100.00(51)

S2	156	F	P	P::100.00(51)
S2	157	F	V	V::100.00(51)
S2	158	F	C	C::100.00(50)
S2	159	F	P	P::100.00(50)
S2	160	F	L	L::58.00(29) P::40.00(20)
S2	161	F	I	I::52.94(27) L::39.22(20) V::7.84(4)
S2	162	F	P	P::98.15(53)
S2	163	F	G	G::100.00(60)
S2	164	F	S	S::100.00(49)
S2	165	F	S	S::100.00(50)
S2	166	F	T	T::100.00(50)
S2	167	F	T	T::100.00(50)
S2	168	F	S	S::100.00(50)
S2	169	F	T	T::100.00(50)
S2	170	F	G	G::100.00(50)
S2	171	F	P	P::100.00(49)
S2	172	F	C	C::100.00(46)
S2	173	F	R	R::100.00(43)
S2	174	F	T	T::100.00(47)
S2	175	F	C	C::100.00(47)
S2	176	F	T	T::100.00(35)
S2	177	F	T	T::100.00(35)
S2	178	F	P	P::54.29(19) L::45.71(16)
S2	179	F	A	A::100.00(36)
S2	180	F	Q	Q::100.00(40)
S2	181	F	G	G::100.00(37)
S2	182	F	T	T::100.00(36)
S2	183	F	S	S::100.00(36)
S2	184	F	M	M::88.89(32) I::11.11(4)
S2	185	F	Y	Y::45.45(15) F::39.39(13) K::15.15(5)
S2	186	F	P	P::84.85(28) H::15.15(5)
S2	187	F	S	S::96.88(31)
S2	188	F	C	C::100.00(32)
S2	189	F	C	C::100.00(33)
S2	190	F	C	C::100.00(33)
S2	191	F	T	S::47.22(17) T::41.67(15) I::11.11(4)
S2	192	F	K	K::94.44(34) E::5.56(2)
S2	193	F	P	P::100.00(38)
S2	194	F	S	S::100.00(38)
S2	195	F	D	D::100.00(36)
S2	196	F	G	G::100.00(36)
S2	197	F	N	N::100.00(35)
S2	198	F	C	C::100.00(41)
S2	199	F	T	T::100.00(41)
S2	200	F	C	C::100.00(43)
S2	201	F	I	I::100.00(45)
S2	202	F	P	P::100.00(44)
S2	203	F	I	I::100.00(42)
S2	204	F	P	P::100.00(40)
S2	205	F	S	S::100.00(42)
S2	206	F	S	S::100.00(43)

S2	207	F	W	W::95.35(41)
S2	208	F	A	A::100.00(44)
S2	210	F	G	G::95.00(38) K::5.00(2)
S2	211	F	K	K::100.00(40)
S2	213	F	L	L::100.00(38)
S2	214	F	W	W::94.74(36) *:5.26(2)
S2	215	F	E	E::94.74(36) K::5.26(2)
S2	216	F	W	W::94.87(37) *:5.13(2)
S2	217	F	A	A::100.00(41)
S2	218	F	S	S::100.00(41)
S2	219	F	A	A::100.00(53)
S2	220	F	R	R::100.00(53)
S2	222	F	S	S::100.00(51)
S2	223	F	W	W::91.84(45) *:8.16(4)
S2	224	F	L	L::100.00(49)
S2	225	F	S	S::100.00(49)
S2	226	F	L	L::100.00(49)
S2	227	F	L	L::100.00(49)
S2	228	F	V	V::100.00(56)
S2	229	F	P	P::100.00(60)
S2	231	F	V	V::94.12(64) I::5.88(4)
S2	232	F	Q	Q::100.00(68)
S2	233	F	W	W::92.65(63) *:5.88(4)
S2	235	F	V	V::86.57(58) A::13.43(9)
S2	236	F	G	G::92.75(64) K::5.80(4)
S2	237	F	L	L::100.00(73)
S2	238	F	S	S::100.00(73)
S2	239	F	P	P::100.00(72)
S2	240	F	T	T::100.00(72)
S2	241	F	V	V::100.00(70)
S2	242	F	W	W::94.12(64) *:5.88(4)
S2	243	F	L	L::89.71(61) P::10.29(7)
S2	244	F	S	S::79.41(54) L::19.12(13)
S2	245	F	V	V::89.71(61) A::10.29(7)
S2	246	F	I	I::91.18(62) T::8.82(6)
S2	247	F	W	W::96.92(63)
S2	248	F	M	M::96.61(57)
S2	249	F	M	M::96.55(56)
S2	250	F	W	W::96.49(55)
S2	251	F	Y	Y::71.93(41) F::28.07(16)
S2	252	F	W	W::96.49(55)
S2	253	F	G	G::96.55(56)
S2	254	F	P	P::90.74(49) R::9.26(5)
S2	255	F	S	S::100.00(52)
S2	256	F	L	L::100.00(52)
S2	257	F	Y	Y::100.00(52)
S2	258	F	N	N::52.00(26) S::48.00(24)
S2	259	F	I	I::100.00(50)
S2	260	F	L	L::98.00(49)
S2	261	F	S	S::100.00(50)
S2	262	F	P	P::100.00(45)

S2	264	F	I	I::57.78(26) L::42.22(19)
S2	265	F	P	P::100.00(45)
S2	266	F	L	L::100.00(45)
S2	267	F	L	L::100.00(45)
S2	268	F	P	P::100.00(33)
S2	269	F	I	I::100.00(43)
S2	272	F	C	C::100.00(47)
S2	273	F	L	L::97.87(46)
S2	274	F	W	W::100.00(47)
S2	275	F	V	V::61.70(29) A::38.30(18)
S2	276	F	Y	Y::100.00(47)
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X	1	F	M	M::100.00(8)
X	2	F	A	A::100.00(8)
X	3	F	A	A::100.00(8)
X	4	F	R	R::100.00(15)
X	5	F	L	L::100.00(15)
X	6	F	C	C::100.00(13)
X	7	F	C	C::100.00(16)
X	8	F	Q	Q::100.00(13)
X	9	F	L	L::100.00(15)
X	10	F	D	D::53.33(8) N::46.67(7)
X	11	F	P	P::100.00(15)
X	12	F	A	A::100.00(15)
X	13	F	R	R::100.00(15)
X	14	F	D	D::100.00(15)
X	15	F	V	V::100.00(15)
X	16	F	L	L::100.00(15)
X	17	F	C	C::100.00(15)
X	18	F	L	L::100.00(15)
X	19	F	R	R::100.00(15)
X	20	F	P	P::100.00(15)
X	21	F	V	V::100.00(15)
X	22	F	G	G::73.33(11) S::26.67(4)
X	23	F	A	A::93.33(14) T::6.67(1)
X	24	F	E	E::93.33(14) K::6.67(1)
X	25	F	S	S::100.00(14)
X	26	F	C	C::100.00(14)
X	27	F	G	G::92.86(13) R::7.14(1)
X	28	F	R	R::100.00(14)
X	29	F	P	P::100.00(14)
X	30	F	F	F::71.43(10) V::28.57(4)
X	31	F	S	S::100.00(14)
X	32	F	G	E::50.00(7) G::42.86(6) R::7.14(1)
X	33	F	P	P::73.33(11) S::26.67(4)
X	34	F	L	L::100.00(15)
X	35	F	E	G::46.67(7) E::46.67(7) K::6.67(1)
X	36	F	T	T::76.47(13) D::17.65(3) N::5.88(1)
X	37	F	L	L::100.00(20)
X	38	F	S	S::100.00(22)
X	39	F	S	S::100.00(22)
X	40	F	P	P::100.00(23)

X	41	F	S	S::100.00(22)
X	42	F	P	P::95.45(21)
X	43	F	S	S::100.00(22)
X	44	F	A	A::100.00(22)
X	45	F	V	V::91.67(22) I::8.33(2)
X	46	F	S	S::72.73(16) P::27.27(6)
X	47	F	T	T::72.73(16) A::27.27(6)
X	48	F	D	D::81.82(18) N::18.18(4)
X	49	F	H	H::100.00(22)
X	50	F	G	G::88.89(16) E::11.11(2)
X	51	F	A	A::100.00(18)
X	52	F	H	H::100.00(22)
X	53	F	L	L::100.00(23)
X	54	F	S	S::100.00(23)
X	55	F	L	L::100.00(21)
X	56	F	R	R::100.00(23)
X	57	F	G	G::90.48(19) S::9.52(2)
X	58	F	L	L::100.00(21)
X	59	F	P	P::100.00(21)
X	60	F	V	V::100.00(21)
X	61	F	C	C::100.00(21)
X	62	F	A	A::65.00(13) T::35.00(7)
X	64	F	S	S::100.00(20)
X	65	F	S	S::100.00(20)
X	66	F	A	A::100.00(20)
X	67	F	G	G::95.00(19) R::5.00(1)
X	68	F	P	P::100.00(20)
X	69	F	C	C::100.00(20)
X	70	F	A	A::100.00(30)
X	71	F	L	L::100.00(30)
X	72	F	R	R::100.00(30)
X	74	F	T	T::100.00(30)
X	75	F	S	S::100.00(30)
X	76	F	A	A::100.00(32)
X	77	F	R	R::100.00(72)
X	78	F	R	R::100.00(75)
X	79	F	M	M::100.00(79)
X	80	F	E	E::100.00(82)
X	81	F	T	T::100.00(82)
X	82	F	T	T::100.00(82)
X	83	F	V	V::100.00(80)
X	84	F	N	N::100.00(80)
X	85	F	A	A::98.75(79)
X	86	F	H	H::98.67(74)
X	87	F	Q	Q::100.00(74)
X	88	F	I	I::54.79(40) F::43.84(32)
X	89	F	L	L::100.00(73)
X	90	F	P	P::100.00(75)
X	91	F	K	K::100.00(75)
X	92	F	V	V::100.00(75)
X	93	F	L	L::100.00(75)

X	94	F	H	H::100.00(79)
X	95	F	K	K::100.00(76)
X	96	F	R	R::100.00(76)
X	97	F	T	T::100.00(76)
X	98	F	L	L::98.68(75)
X	99	F	G	G::100.00(97)
X	100	F	L	L::100.00(97)
X	101	F	S	S::100.00(95)
X	102	F	A	A::53.19(50) V::40.43(38) T::6.38(6)
X	103	F	M	M::100.00(96)
X	104	F	S	S::100.00(97)
X	105	F	T	T::100.00(98)
X	106	F	T	T::100.00(97)
X	107	F	D	D::98.97(96)
X	108	F	L	L::100.00(97)
X	109	F	E	E::100.00(99)
X	110	F	A	A::100.00(100)
X	111	F	Y	Y::100.00(108)
X	113	F	K	K::99.07(107)
X	114	F	D	D::99.07(107)
X	115	F	C	C::94.50(103) Y::5.50(6)
X	116	F	L	L::100.00(111)
X	118	F	K	K::100.00(110)
X	119	F	D	D::54.55(60) E::45.45(50)
X	120	F	W	W::100.00(102)
X	121	F	E	E::100.00(99)
X	122	F	E	E::97.98(97)
X	123	F	L	L::53.54(53) S::45.45(45)
X	124	F	G	G::100.00(99)
X	125	F	E	E::100.00(98)
X	126	F	E	E::100.00(55)
X	127	F	I	I::93.48(43) T::6.52(3)
X	128	F	R	R::84.78(39) K::15.22(7)
X	129	F	L	L::100.00(46)
X	130	F	R	R::55.56(25) M::37.78(17) I::6.67(3)
X	131	F	L	L::55.56(25) I::44.44(20)
X	133	F	V	V::100.00(47)
X	134	F	L	L::100.00(47)
X	135	F	G	G::86.54(45) R::13.46(7)
X	136	F	G	G::100.00(54)
X	137	F	C	C::100.00(54)
X	138	F	R	R::98.15(53)
X	139	F	H	H::100.00(61)
X	140	F	K	K::100.00(62)
X	141	F	L	L::100.00(62)
X	142	F	V	V::100.00(66)
X	143	F	C	C::100.00(66)
X	144	F	A	A::100.00(66)
X	145	F	P	P::96.97(64)
X	146	F	A	A::100.00(66)
X	147	F	P	P::100.00(73)

X	148	F	C	C::100.00(64)
X	149	F	N	N::100.00(49)
X	152	F	T	T::100.00(57)
X	153	F	S	S::100.00(59)
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C	1	F	M	M::100.00(69)
C	2	F	D	D::100.00(69)
C	3	F	I	I::98.48(65)
C	4	F	D	D::100.00(66)
C	5	F	P	P::100.00(66)
C	6	F	Y	Y::100.00(62)
C	7	F	K	K::100.00(65)
C	8	F	E	E::100.00(66)
C	10	F	G	G::100.00(76)
C	11	F	A	A::100.00(77)
C	12	F	T	T::65.33(49) S::34.67(26)
C	13	F	V	V::100.00(79)
C	14	F	E	E::100.00(77)
C	15	F	L	L::100.00(75)
C	16	F	L	L::100.00(76)
C	17	F	S	S::100.00(76)
C	19	F	L	L::100.00(80)
C	20	F	P	P::100.00(77)
C	21	F	S	S::100.00(75)
C	22	F	D	D::100.00(75)
C	25	F	P	P::100.00(69)
C	26	F	S	S::100.00(67)
C	27	F	V	V::100.00(70)
C	28	F	R	R::100.00(64)
C	29	F	D	D::98.44(63)
C	30	F	L	L::100.00(64)
C	31	F	L	L::80.70(46) Q::19.30(11)
C	32	F	D	D::100.00(57)
C	33	F	T	T::100.00(54)
C	34	F	A	A::100.00(56)
C	35	F	S	S::100.00(56)
C	36	F	A	A::100.00(57)
C	37	F	L	L::100.00(56)
C	38	F	Y	Y::100.00(51)
C	39	F	R	R::98.04(50)
C	40	F	E	E::86.54(45) D::13.46(7)
C	41	F	A	A::100.00(52)
C	42	F	L	L::100.00(52)
C	43	F	E	E::100.00(53)
C	44	F	S	S::98.11(52)
C	45	F	P	P::100.00(55)
C	46	F	E	E::100.00(51)
C	47	F	H	H::100.00(50)
C	48	F	C	C::100.00(47)
C	49	F	T	T::82.98(39) S::17.02(8)
C	50	F	P	P::100.00(47)
C	51	F	H	H::100.00(47)

C	52	F	H	H::100.00(47)
C	53	F	T	T::100.00(54)
C	54	F	A	A::100.00(54)
C	55	F	L	L::100.00(51)
C	56	F	R	R::100.00(51)
C	57	F	Q	Q::100.00(51)
C	58	F	A	A::100.00(45)
C	59	F	I	I::100.00(45)
C	60	F	L	L::94.59(35) F::5.41(2)
C	61	F	C	C::100.00(37)
C	62	F	W	W::100.00(34)
C	63	F	G	G::100.00(34)
C	64	F	D	D::77.78(28) E::22.22(8)
C	65	F	L	L::100.00(34)
C	66	F	M	M::94.44(34) I::5.56(2)
C	67	F	T	T::97.30(36)
C	68	F	L	L::100.00(33)
C	69	F	A	A::93.94(31) T::6.06(2)
C	70	F	T	T::100.00(28)
C	71	F	W	W::100.00(28)
C	72	F	V	V::100.00(31)
C	73	F	G	G::100.00(30)
C	74	F	G	G::63.33(19) V::33.33(10)
C	75	F	N	N::93.33(28) S::6.67(2)
C	76	F	L	L::100.00(28)
C	77	F	E	E::100.00(28)
C	78	F	D	D::100.00(26)
C	79	F	P	P::92.31(24) L::7.69(2)
C	80	F	V	V::59.09(13) A::40.91(9)
C	81	F	S	S::100.00(22)
C	82	F	R	R::100.00(22)
C	83	F	D	D::100.00(31)
C	84	F	L	L::100.00(31)
C	85	F	V	V::93.55(29) I::6.45(2)
C	86	F	V	V::100.00(27)
C	87	F	S	S::96.55(28)
C	88	F	Y	Y::100.00(32)
C	89	F	V	V::100.00(34)
C	90	F	N	N::96.97(32)
C	91	F	T	T::100.00(33)
C	92	F	N	N::96.88(31)
C	93	F	M	M::96.43(27)
C	94	F	G	G::92.86(26) A::7.14(2)
C	95	F	L	L::100.00(28)
C	96	F	K	K::100.00(32)
C	98	F	R	R::100.00(33)
C	99	F	Q	Q::100.00(33)
C	100	F	L	L::100.00(33)
C	101	F	L	L::100.00(36)
C	102	F	W	W::100.00(37)
C	104	F	H	H::100.00(35)



C	105	F	I	I::100.00(35)
C	106	F	S	S::100.00(35)
C	107	F	C	C::100.00(36)
C	108	F	L	L::100.00(36)
C	109	F	T	T::100.00(36)
C	111	F	G	G::97.14(34)
C	112	F	R	R::100.00(34)
C	113	F	Q	Q::84.38(27) E::15.62(5)
C	114	F	T	T::100.00(30)
C	115	F	V	V::100.00(30)
C	116	F	I	I::76.67(23) V::23.33(7)
C	117	F	E	E::100.00(31)
C	118	F	Y	Y::100.00(32)
C	119	F	L	L::100.00(32)
C	120	F	V	V::100.00(29)
C	121	F	S	S::100.00(31)
C	123	F	G	G::100.00(37)
C	124	F	V	V::100.00(37)
C	125	F	W	W::100.00(36)
C	126	F	I	I::100.00(37)
C	127	F	R	R::97.30(36)
C	128	F	T	T::100.00(34)
C	129	F	P	P::100.00(34)
C	130	F	P	P::90.91(30) Q::9.09(3)
C	131	F	A	A::100.00(32)
C	132	F	Y	Y::100.00(30)
C	133	F	R	R::100.00(30)
C	134	F	P	P::100.00(32)
C	135	F	P	P::100.00(36)
C	136	F	N	N::100.00(36)
C	137	F	A	A::100.00(31)
C	138	F	P	P::100.00(29)
C	139	F	I	I::100.00(29)
C	140	F	L	L::100.00(29)
C	141	F	S	S::100.00(29)
C	142	F	T	T::100.00(32)
C	143	F	L	L::90.00(27) T::10.00(3)
C	144	F	P	P::100.00(30)
C	145	F	E	E::100.00(34)
C	146	F	T	T::57.58(19) N::42.42(14)
C	147	F	T	T::100.00(38)
C	148	F	V	V::100.00(43)
C	149	F	V	V::88.37(38) I::11.63(5)
C	150	F	R	R::100.00(41)
C	151	F	R	R::87.18(34) G::12.82(5)
C	152	F	R	R::100.00(44)
C	153	F	G	G::89.80(44) C::10.20(5)
C	154	F	R	R::100.00(51)
C	155	F	S	S::100.00(51)
C	156	F	P	P::100.00(51)
C	157	F	R	R::100.00(50)

C	158	F	R	R::98.00(49)
C	159	F	R	R::100.00(51)
C	160	F	T	T::100.00(61)
C	161	F	P	P::100.00(65)
C	162	F	S	S::96.92(63)
C	163	F	P	P::100.00(67)
C	164	F	R	R::100.00(68)
C	165	F	R	R::98.53(67)
C	166	F	R	R::100.00(67)
C	167	F	R	R::100.00(65)
C	168	F	S	S::98.46(64)
C	169	F	Q	Q::82.81(53) K::17.19(11)
C	170	F	S	S::100.00(66)
C	171	F	P	P::100.00(69)
C	172	F	R	R::97.06(66)
C	173	F	R	R::100.00(68)
C	174	F	R	R::95.52(64)
C	175	F	R	R::100.00(73)
C	176	F	S	S::100.00(73)
C	177	F	Q	Q::100.00(71)
C	178	F	S	S::95.77(68)
C	179	F	R	R::67.16(45) P::32.84(22)
C	180	F	E	E::67.16(45) A::32.84(22)
C	181	F	S	S::100.00(67)
C	182	F	Q	Q::100.00(69)
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P1	1	F	M	M::100.00(36)
P1	2	F	P	P::100.00(31)
P1	3	F	L	L::100.00(29)
P1	4	F	S	S::100.00(29)
P1	5	F	Y	Y::100.00(29)
P1	6	F	Q	Q::79.31(23) R::10.34(3) L::10.34(3)
P1	7	F	H	H::56.25(18) L::34.38(11) Q::9.38(3)
P1	8	F	F	F::90.00(27) L::10.00(3)
P1	9	F	R	R::100.00(30)
P1	10	F	R	R::100.00(34)
P1	11	F	L	L::57.58(19) I::42.42(14)
P1	12	F	L	L::100.00(38)
P1	13	F	L	L::100.00(43)
P1	14	F	L	L::100.00(43)
P1	15	F	D	D::87.18(34) E::12.82(5)
P1	16	F	D	D::61.54(24) E::38.46(15)
P1	17	F	E	E::89.36(42) D::10.64(5)
P1	18	F	A	A::100.00(51)
P1	19	F	G	G::100.00(51)
P1	20	F	P	P::100.00(51)
P1	21	F	L	L::100.00(50)
P1	22	F	E	E::100.00(50)
P1	23	F	E	E::98.00(49)
P1	24	F	E	E::100.00(51)
P1	25	F	L	L::100.00(61)
P1	26	F	P	P::100.00(65)

P1	27	F	R	R::97.01(65)
P1	28	F	L	L::100.00(67)
P1	29	F	A	A::100.00(68)
P1	30	F	D	D::98.53(67)
P1	31	F	E	E::100.00(67)
P1	32	F	D	D::56.92(37) G::43.08(28)
P1	33	F	L	L::98.46(64)
P1	34	F	N	N::100.00(66)
P1	35	F	R	R::100.00(69)
P1	36	F	R	R::100.00(68)
P1	37	F	V	V::100.00(70)
P1	38	F	A	A::100.00(67)
P1	39	F	E	E::95.52(64)
P1	40	F	D	D::100.00(73)
P1	41	F	L	L::100.00(73)
P1	42	F	N	N::100.00(71)
P1	43	F	L	L::95.77(68)
P1	44	F	G	G::65.67(44) Q::32.84(22)
P1	45	F	N	N::67.16(45) L::32.84(22)
P1	46	F	L	L::67.65(46) P::32.35(22)
P1	47	F	N	N::100.00(69)
P1	48	F	V	V::100.00(67)
P1	49	F	S	S::95.31(61)
P1	50	F	I	I::100.00(83)
P1	51	F	P	P::100.00(83)
P1	52	F	W	W::100.00(83)
P1	53	F	T	T::100.00(83)
P1	54	F	H	H::100.00(85)
P1	55	F	K	K::100.00(85)
P1	56	F	V	V::100.00(86)
P1	57	F	G	G::100.00(86)
P1	58	F	N	N::100.00(81)
P1	60	F	T	T::100.00(84)
P1	61	F	G	G::100.00(82)
P1	62	F	L	L::100.00(82)
P1	63	F	Y	Y::100.00(78)
P1	64	F	S	S::100.00(78)
P1	65	F	S	S::100.00(80)
P1	66	F	T	T::100.00(74)
P1	67	F	V	V::54.41(37) I::45.59(31)
P1	68	F	P	P::100.00(76)
P1	69	F	V	V::100.00(76)
P1	71	F	N	N::100.00(69)
P1	72	F	P	P::100.00(70)
P1	73	F	H	H::53.03(35) N::46.97(31)
P1	74	F	W	W::100.00(66)
P1	75	F	K	K::100.00(65)
P1	76	F	T	T::100.00(66)
P1	77	F	P	P::100.00(63)
P1	78	F	S	S::100.00(68)
P1	80	F	P	P::100.00(70)

P1	81	F	N	N::50.00(34) D::50.00(34)
P1	82	F	I	I::100.00(71)
P1	83	F	H	H::100.00(71)
P1	84	F	L	L::100.00(72)
P1	85	F	H	H::100.00(69)
P1	86	F	Q	Q::100.00(64)
P1	87	F	D	D::98.44(63)
P1	88	F	I	I::100.00(67)
P1	89	F	I	I::100.00(64)
P1	90	F	N	N::50.75(34) K::49.25(33)
P1	91	F	K	K::100.00(67)
P1	92	F	C	C::100.00(69)
P1	93	F	E	E::100.00(67)
P1	94	F	Q	Q::100.00(68)
P1	96	F	V	V::100.00(68)
P1	97	F	G	G::100.00(68)
P1	98	F	P	P::100.00(48)
P1	99	F	L	L::100.00(48)
P1	100	F	T	T::100.00(51)
P1	101	F	V	V::100.00(50)
P1	102	F	N	N::100.00(55)
P1	103	F	E	E::100.00(54)
P1	104	F	K	K::100.00(52)
P1	105	F	R	R::100.00(52)
P1	106	F	R	R::100.00(53)
P1	107	F	L	L::100.00(46)
P1	108	F	Q	Q::82.22(37) N::17.78(8)
P1	109	F	L	L::100.00(44)
P1	110	F	I	I::82.98(39) V::17.02(8)
P1	111	F	M	M::100.00(47)
P1	112	F	P	P::97.78(44)
P1	113	F	A	A::100.00(46)
P1	114	F	R	R::100.00(45)
P1	116	F	Y	Y::89.74(35) F::10.26(4)
P1	117	F	P	P::100.00(40)
P1	118	F	K	K::85.00(34) I::10.00(4) N::5.00(2)
P1	119	F	V	V::90.00(36) S::10.00(4)
P1	120	F	T	T::100.00(40)
P1	121	F	K	K::100.00(41)
P1	122	F	Y	Y::100.00(41)
P1	123	F	L	L::100.00(41)
P1	124	F	P	P::100.00(41)
P1	125	F	L	L::100.00(38)
P1	126	F	D	D::81.58(31) E::18.42(7)
P1	127	F	K	K::100.00(38)
P1	128	F	G	G::100.00(40)
P1	129	F	I	I::100.00(42)
P1	130	F	K	K::100.00(41)
P1	131	F	P	P::100.00(41)
P1	132	F	Y	Y::100.00(39)
P1	133	F	Y	Y::100.00(38)

P1	134	F	P	P::100.00(40)
P1	135	F	E	E::81.08(30) D::18.92(7)
P1	136	F	H	H::83.78(31) N::16.22(6)
P1	137	F	L	L::83.78(31) V::16.22(6)
P1	138	F	V	V::86.84(33) I::13.16(5)
P1	139	F	N	N::100.00(34)
P1	140	F	H	H::100.00(33)
P1	141	F	Y	Y::100.00(32)
P1	143	F	Q	Q::100.00(31)
P1	144	F	T	T::100.00(30)
P1	145	F	R	R::100.00(32)
P1	146	F	H	H::100.00(32)
P1	147	F	Y	Y::100.00(31)
P1	148	F	L	L::100.00(32)
P1	149	F	H	H::100.00(30)
P1	150	F	T	T::100.00(28)
P1	151	F	L	L::100.00(27)
P1	152	F	W	W::100.00(28)
P1	153	F	K	K::100.00(29)
P1	154	F	A	A::100.00(29)
P1	155	F	G	G::100.00(30)
P1	156	F	I	I::100.00(30)
P1	157	F	L	L::100.00(30)
P1	158	F	Y	Y::100.00(27)
P1	159	F	K	K::100.00(26)
P1	160	F	R	R::100.00(24)
P1	161	F	E	E::100.00(24)
P1	162	F	T	T::100.00(23)
P1	163	F	T	T::100.00(25)
P1	164	F	H	H::76.00(19) R::24.00(6)
P1	165	F	S	S::100.00(23)
P1	166	F	A	A::100.00(23)
P1	167	F	S	S::100.00(23)
P1	169	F	C	C::100.00(23)
P1	170	F	G	G::100.00(24)
P1	171	F	S	S::100.00(24)
P1	172	F	P	P::100.00(24)
P1	173	F	Y	Y::100.00(24)
P1	174	F	S	S::100.00(24)
P1	175	F	W	W::100.00(22)
P1	176	F	E	E::100.00(22)
P1	177	F	Q	Q::100.00(24)
P1	178	F	E	E::100.00(21)
P1	179	F	L	L::100.00(21)
P1	180	F	R	R::80.00(16) H::15.00(3) Q::5.00(1)
P1	181	F	H	H::100.00(22)
P1	182	F	G	G::100.00(28)
P1	183	F	A	A::76.92(20) E::19.23(5)
P1	184	F	E	E::100.00(26)
P1	185	F	S	S::100.00(27)
P1	187	F	H	H::100.00(25)

P1	188	F	Q	Q::80.77(21) H::19.23(5)
P1	189	F	Q	Q::100.00(26)
P1	190	F	S	S::100.00(26)
P1	191	F	S	S::100.00(26)
P1	192	F	G	G::100.00(30)
P1	193	F	I	I::100.00(30)
P1	194	F	L	L::83.33(25) F::16.67(5)
P1	195	F	S	S::100.00(28)
P1	196	F	R	R::100.00(28)
P1	197	F	P	P::100.00(28)
P1	198	F	P	P::100.00(30)
P1	199	F	V	V::100.00(31)
P1	200	F	G	G::100.00(30)
P1	201	F	S	S::100.00(30)
P1	202	F	S	S::100.00(29)
P1	203	F	L	L::75.00(21) I::25.00(7)
P1	204	F	Q	Q::100.00(27)
P1	205	F	S	S::100.00(27)
P1	206	F	K	K::100.00(29)
P1	207	F	H	H::100.00(29)
P1	208	F	R	R::70.97(22) Q::29.03(9)
P1	209	F	K	K::100.00(33)
P1	210	F	P	P::66.67(22) S::33.33(11)
P1	211	F	R	R::100.00(34)
P1	212	F	L	L::100.00(31)
P1	213	F	G	G::100.00(31)
P1	214	F	L	L::70.59(24) P::29.41(10)
P1	215	F	Q	Q::100.00(43)
P1	216	F	S	S::100.00(43)
P1	217	F	Q	Q::97.87(46)
P1	218	F	Q	Q::100.00(44)
P1	219	F	G	G::67.44(29) R::32.56(14)
P1	220	F	P	P::51.16(22) H::48.84(21)
P1	221	F	L	L::100.00(43)
P1	222	F	A	A::67.44(29) D::32.56(14)
P1	223	F	R	R::66.67(30) G::33.33(15)
P1	224	F	R	R::51.11(23) S::35.56(16) C::13.33(6)
P1	225	F	Q	Q::100.00(46)
P1	226	F	Q	Q::100.00(45)
P1	227	F	G	G::100.00(44)
P1	228	F	R	R::100.00(47)
P1	229	F	S	S::95.65(44)
P1	230	F	W	W::64.44(29) G::35.56(16)
P1	231	F	S	S::100.00(45)
P1	232	F	I	I::100.00(46)
P1	233	F	R	R::100.00(44)
P1	234	F	A	A::100.00(43)
P1	235	F	G	G::62.79(27) W::37.21(16)
P1	236	F	I	I::62.79(27) V::27.91(12) G::9.30(4)
P1	237	F	H	H::100.00(42)
P1	238	F	P	P::61.90(26) S::38.10(16)

P1	239	F	T	T::60.98(25) P::39.02(16)
P1	240	F	A	A::58.54(24) T::41.46(17)
P1	241	F	R	R::100.00(40)
P1	242	F	R	R::100.00(38)
P1	243	F	P	P::100.00(38)
P1	245	F	G	G::100.00(42)
P1	246	F	V	V::100.00(41)
P1	247	F	E	E::100.00(40)
P1	248	F	P	P::100.00(40)
P1	249	F	S	S::100.00(40)
P1	250	F	G	G::100.00(40)
P1	251	F	S	S::100.00(40)
P1	252	F	G	G::58.33(21) R::41.67(15)
P1	253	F	H	H::100.00(36)
P1	254	F	T	T::64.52(20) A::35.48(11)
P1	255	F	T	T::64.52(20) K::35.48(11)
P1	256	F	N	N::100.00(34)
P1	257	F	L	L::39.39(13) L::33.33(11) Q::27.27(9)
P1	258	F	A	A::100.00(35)
P1	259	F	S	S::97.22(35)
P1	260	F	K	K::57.14(20) R::37.14(13) N::5.71(2)
P1	261	F	S	S::100.00(36)
P1	262	F	A	A::100.00(30)
P1	263	F	S	S::100.00(30)
P1	264	F	C	C::100.00(27)
P1	265	F	L	L::95.83(23)
P1	266	F	Y	Y::58.33(14) H::37.50(9)
P1	267	F	Q	Q::100.00(23)
P1	268	F	S	S::100.00(23)
P1	269	F	P	P::63.64(14) A::36.36(8)
P1	270	F	V	V::100.00(22)
P1	271	F	R	R::100.00(22)
P1	272	F	K	K::100.00(17)
P1	273	F	A	A::100.00(17)
P1	274	F	A	A::100.00(17)
P1	275	F	Y	Y::100.00(17)
P1	276	F	S	S::58.82(10) P::41.18(7)
P1	277	F	A	A::58.82(10) N::41.18(7)
P1	278	F	V	V::58.82(10) H::41.18(7)
P1	279	F	S	S::100.00(17)
P1	280	F	T	T::100.00(14)
P1	282	F	E	E::100.00(14)
P1	283	F	R	R::100.00(13)
P1	284	F	H	H::100.00(13)
P1	285	F	S	S::53.85(7) T::46.15(6)
P1	286	F	S	S::100.00(13)
P1	287	F	S	S::100.00(13)
P1	288	F	G	G::100.00(13)
P1	289	F	H	H::100.00(13)
P1	290	F	A	A::100.00(13)
P1	291	F	V	V::100.00(13)

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S1	1	F	M	M::100.00(22)
S1	2	F	G	G::100.00(28)
S1	3	F	Q	Q::80.77(21) K::19.23(5)
S1	4	F	N	N::100.00(27)
S1	5	F	L	L::81.48(22) H::18.52(5)
S1	6	F	S	S::100.00(27)
S1	7	F	T	T::100.00(26)
S1	8	F	S	S::80.77(21) T::19.23(5)
S1	9	F	N	N::100.00(26)
S1	10	F	P	P::100.00(26)
S1	11	F	L	L::100.00(26)
S1	12	F	G	G::100.00(30)
S1	15	F	P	P::100.00(28)
S1	16	F	D	D::100.00(28)
S1	17	F	H	H::100.00(30)
S1	18	F	Q	Q::100.00(30)
S1	19	F	L	L::100.00(31)
S1	20	F	D	D::100.00(30)
S1	21	F	P	P::100.00(29)
S1	22	F	A	A::100.00(28)
S1	24	F	R	R::100.00(27)
S1	25	F	A	A::100.00(27)
S1	26	F	N	N::100.00(29)
S1	27	F	T	T::100.00(29)
S1	28	F	A	A::70.97(22) R::29.03(9)
S1	29	F	N	N::100.00(33)
S1	30	F	P	P::100.00(34)
S1	31	F	D	D::100.00(34)
S1	32	F	W	W::100.00(31)
S1	33	F	D	D::100.00(31)
S1	34	F	F	F::70.59(24) H::29.41(10)
S1	35	F	N	N::100.00(43)
S1	36	F	P	P::100.00(46)
S1	37	F	N	N::97.87(46)
S1	38	F	K	K::100.00(43)
S1	39	F	D	D::100.00(43)
S1	40	F	P	T::48.84(21) H::32.56(14) P::18.60(8)
S1	41	F	W	W::100.00(43)
S1	42	F	P	P::67.44(29) T::32.56(14)
S1	43	F	D	D::64.44(29) E::35.56(16)
S1	44	F	A	A::100.00(45)
S1	45	F	N	N::100.00(46)
S1	46	F	K	K::100.00(44)
S1	47	F	V	V::100.00(44)
S1	48	F	G	G::100.00(46)
S1	49	F	A	A::65.22(30) V::30.43(14)
S1	50	F	G	G::100.00(45)
S1	51	F	A	A::100.00(46)
S1	53	F	G	G::100.00(44)
S1	54	F	P	P::100.00(43)
S1	55	F	G	G::100.00(43)



S1	57	F	T	T::100.00(42)
S1	58	F	P	P::100.00(42)
S1	59	F	P	P::100.00(41)
S1	60	F	H	H::100.00(41)
S1	61	F	G	G::100.00(38)
S1	62	F	G	G::100.00(38)
S1	63	F	L	L::97.37(37)
S1	64	F	L	L::100.00(42)
S1	65	F	G	G::100.00(42)
S1	66	F	W	W::73.17(30) S::26.83(11)
S1	67	F	S	S::100.00(40)
S1	68	F	P	P::100.00(40)
S1	69	F	Q	Q::100.00(40)
S1	70	F	A	A::100.00(40)
S1	71	F	Q	Q::100.00(36)
S1	72	F	G	G::100.00(36)
S1	73	F	I	I::69.44(25) M::30.56(11)
S1	74	F	L	L::100.00(31)
S1	75	F	Q	Q::65.62(21) K::34.38(11)
S1	76	F	T	T::100.00(34)
S1	77	F	L	L::71.88(23) R::28.12(9)
S1	78	F	P	P::100.00(35)
S1	79	F	A	A::97.22(35)
S1	80	F	N	N::57.14(20) D::37.14(13) I::5.71(2)
S1	81	F	P	P::100.00(36)
S1	82	F	P	P::100.00(30)
S1	83	F	P	P::100.00(29)
S1	84	F	A	A::100.00(24)
S1	85	F	S	S::95.83(23)
S1	86	F	T	T::95.65(22)
S1	87	F	N	N::100.00(23)
S1	88	F	R	R::100.00(22)
S1	89	F	Q	Q::100.00(22)
S1	90	F	S	S::100.00(22)
S1	91	F	G	G::100.00(21)
S1	92	F	R	R::100.00(17)
S1	93	F	Q	Q::100.00(17)
S1	94	F	P	P::100.00(17)
S1	95	F	T	T::100.00(17)
S1	96	F	P	P::100.00(17)
S1	97	F	L	I::41.18(7) L::35.29(6) P::23.53(4)
S1	98	F	S	S::58.82(10) T::41.18(7)
S1	99	F	P	P::82.35(14) L::17.65(3)
S1	100	F	P	P::100.00(14)
S1	101	F	L	L::100.00(14)
S1	102	F	R	R::100.00(14)
S1	103	F	D	D::100.00(13)
S1	104	F	T	T::100.00(13)
S1	105	F	H	H::100.00(13)
S1	106	F	P	P::100.00(13)
S1	107	F	Q	Q::100.00(13)

S1	108	F	A	A::100.00(13)
S1	109	F	M	M::100.00(13)
S1	110	F	Q	Q::100.00(13)

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Meta data	
Assembly file:	HBV-RYD-50.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-50
Date/Time	Mon 25 Mar 12:51:15 GMT 2019