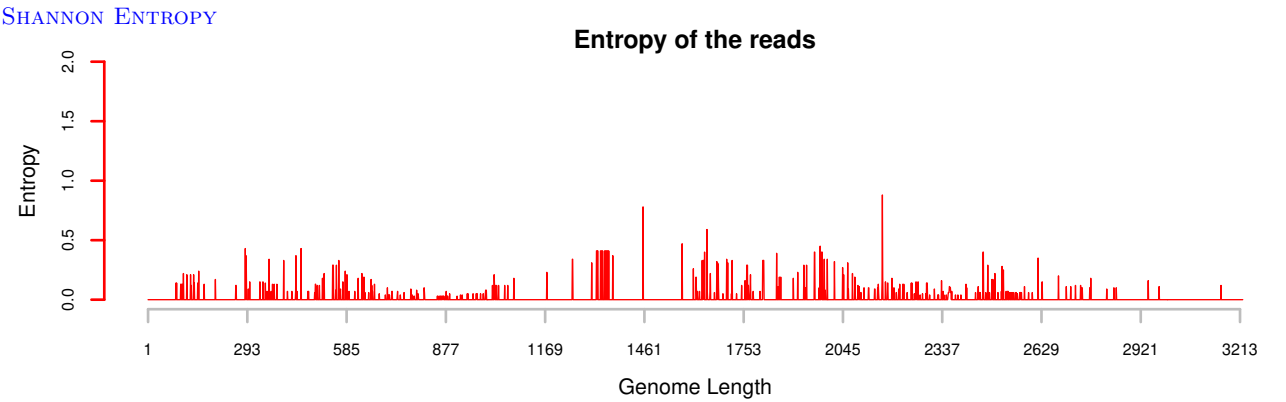
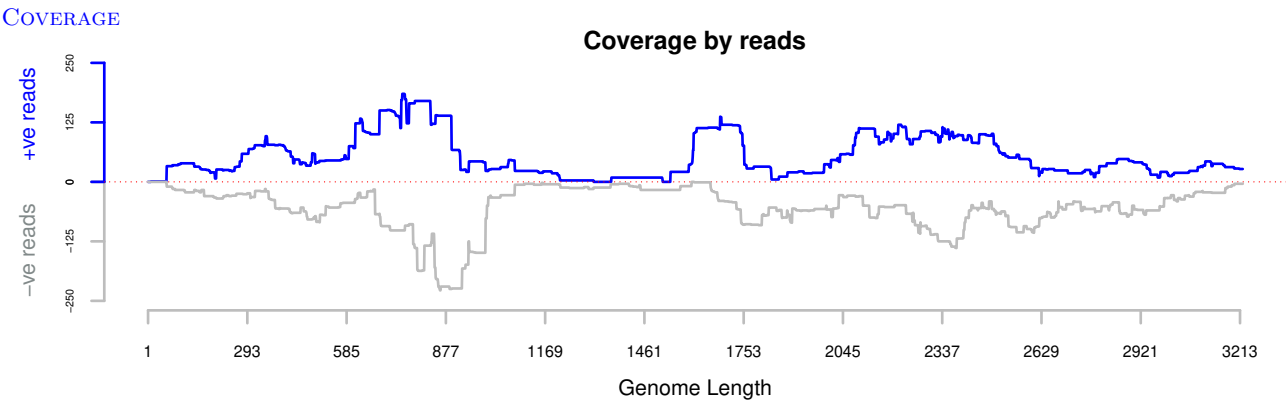
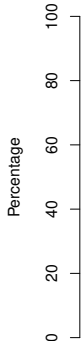


HBV-RYD-15

File name	HBV-RYD-15.sam
Ref name	KX357647.1 Hepatitis B virus isolate BL13ETH, complete genome
Ref len	3221
Program used	Tanoti Assembler 1.0
Total reads	178678
Mapped reads	2347 (1.31%)
Unmapped reads	176331
Mapped loan pairs	17
Average read length	146nt
Coverage	3212nt (99.72%)
Average depth	106 reads/site
Average insert length	0nt



CONSENSUS SEQUENCE

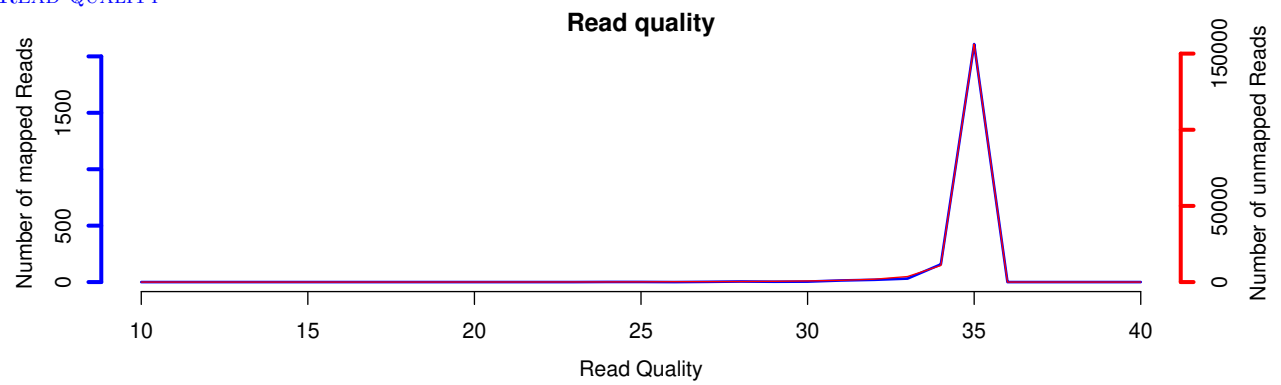
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140    ACCCTGCGCC GAACATGGAG AACATCACAT CAGGATTCCCT AGGACCCCTG CTCGTGTTAC AGGCGGGGTT
210    TTTCTTGTG ACAAGAATCC TCACAATACC GCAGAGTCTA GACTCGTGGT GGACTTCTCT CAATTTTCTA
280    GGGGGATCAC CCGTGTGTCT TGGCCAAAAT TCGCAGTCCC CAACCTCCAA TCACTCACCA ACCTCCTGTC
350    CTCCAATTG TCCTGGTTAT CGCTGGATGT GTCTGCGGCG TTTTATCATA TTCCTCTTCA TCCTGCTGCT
420    ATGCTCATC TTCTTATTGG TTCTTCTGGA TTATCAAGGT ATGTTGCCCG TTTGTCCTCT AATTCCAGGA
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630    AAAATACCTA TGGGAGTGGG CCTCAGTCCG TTTCTCTTGG CTCAGTTTAC TAGTGCCATT TGTTCACTGG
700    TTCGCAGGGC TTTCCCCCAC TGTTTGGCTT TCAGCTATAT GGATGATGTG GTAGTGGGGG CCAAGTCTGT
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840    AACAAAACAA AGAGATGGGG TTATTCCTCG AATTCATGGA GTTATGTAAT TGGAAGTTGG GGTACATTGC
910    CACAGGATCA TATTATACAA AAAATCAAAC ACTGTTTTAG AAAACTGCCT GTTAATCGGC CTATTGATTG
980    GAAAGTATGT CAGAGAATTG TGGGTCTTTT GGGCTTTGCC GCTCCATTTA CTCAATGTGG TTATCCTGCA
1050   TTAATGCCTT TGTATGCATG TATACAAGCA AAACAGGCTT TTACCTTCTC GCCAACTTAC AAGGCCTTTC
1120   TAAGTAAACA GTATGTGAAC CTTTACCCCG TTGCCCGGCA ACGGCCTGGT CTGTGCCAAG TGTTTGCTGA
1190   CGCAACCCCC ACTGGTTGGG GCTTGGCCAT CGGACATCAG CGCATGCGTG GAACCTTTGC GGTCTCCTCG
1260   CCGATCCATA CTGCGGAACCT CCTAGCCGCT TGTTTTGCTC GCAGCCGGTC TGGAGCAAAA CTCATCGGGA
1330   CTGATAATTC TGTCGTCCTT TCTCGGAAAT ATACATCATT TCCATGGCTG CTAGGTTGTA CTGCCAACTG
1400   GATTCTTCGC GGGACGTCCT TTGTTACGT CCCGTGCGCG CTGAATCCCG CGGACGACCC CTCGCGCGGC
1470   CGCTTGGGGC TCTATCGTCC CTTTCTCCGT CTGCCGTACC GTCCGACCAC GGGGCGCACC TCTCTTACG
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1610   GAGACCACCG TGAACGCCCA TCAGAGCCTG CCCAAGGTCT TACATAAGAG GACTCTTGA CTCCCAGCAA
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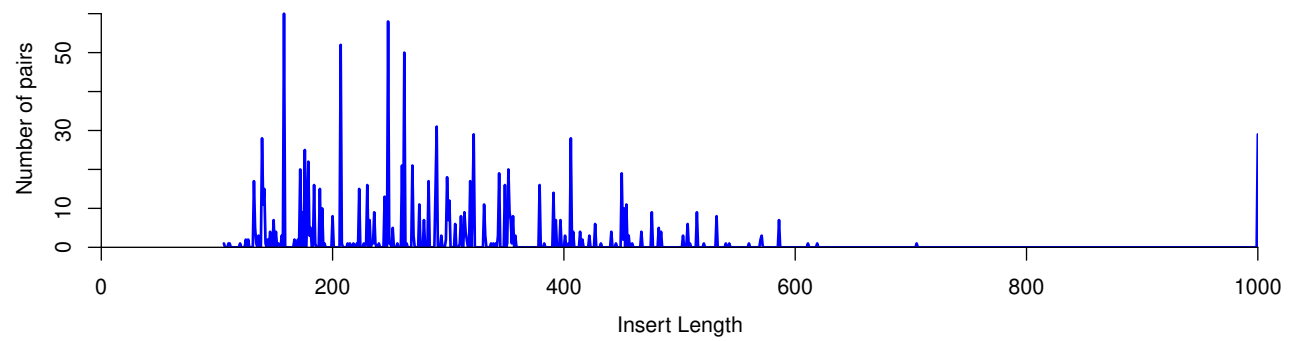
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Genome Composition	
A	737 (22.88%)
T	917 (28.47%)
G	705 (21.89%)
C	853 (26.48%)
N	9 (0.28%)
Total Nucleotides	3221
GC%	48.51

READ QUALITY



INSERT LENGTH DISTRIBUTION



AMINO ACID VARIATIONS

Protein	Position	Ref AA	Consensus AA	All AAs
P2	4	F	P	P::100.00(1)
P2	5	F	P	P::100.00(1)
P2	6	F	N	N::100.00(1)
P2	7	F	S	S::100.00(1)
P2	8	F	A	A::100.00(1)
P2	9	F	R	R::100.00(1)
P2	10	F	S	S::100.00(1)
P2	11	F	Q	Q::100.00(1)
P2	12	F	S	S::100.00(1)
P2	13	F	E	E::100.00(1)
P2	14	F	R	R::100.00(1)
P2	15	F	P	P::100.00(1)
P2	16	F	V	V::100.00(1)
P2	18	F	P	P::100.00(1)
P2	19	F	C	C::100.00(43)
P2	20	F	W	W::100.00(43)
P2	21	F	W	W::100.00(43)
P2	22	F	L	L::100.00(43)
P2	23	F	Q	Q::100.00(43)
P2	25	F	R	R::100.00(50)
P2	26	F	N	N::100.00(50)
P2	27	F	T	T::98.08(51)
P2	28	F	Q	Q::98.08(51)
P2	29	F	P	P::100.00(52)
P2	30	F	C	C::100.00(54)
P2	31	F	S	S::100.00(54)
P2	32	F	K	K::98.21(55)
P2	33	F	Y	Y::100.00(56)
P2	34	F	C	C::100.00(56)
P2	35	F	L	L::100.00(56)
P2	36	F	S	S::100.00(57)
P2	37	F	H	H::100.00(61)
P2	38	F	L	L::96.72(59)
P2	39	F	V	V::100.00(61)
P2	40	F	N	N::100.00(61)
P2	41	F	L	L::100.00(61)
P2	42	F	L	L::98.36(60)
P2	43	F	E	E::100.00(61)
P2	44	F	D	D::100.00(61)
P2	45	F	W	W::97.96(48)
P2	46	F	G	G::100.00(49)
P2	47	F	P	P::100.00(50)
P2	48	F	C	C::100.00(51)
P2	49	F	A	A::100.00(51)
P2	50	F	E	E::100.00(49)
P2	51	F	H	H::100.00(49)

P2	52	F	G	G::100.00(43)
P2	53	F	E	E::100.00(43)
P2	54	F	H	H::100.00(43)
P2	55	F	H	H::98.21(55)
P2	56	F	I	I::100.00(56)
P2	57	F	R	R::100.00(55)
P2	58	F	I	I::100.00(55)
P2	59	F	P	P::100.00(54)
P2	60	F	R	R::100.00(53)
P2	61	F	T	T::100.00(49)
P2	62	F	P	P::100.00(50)
P2	63	F	A	A::100.00(50)
P2	64	F	R	R::100.00(50)
P2	65	F	V	V::100.00(40)
P2	66	F	T	T::97.50(39)
P2	67	F	G	G::100.00(61)
P2	68	F	G	G::100.00(61)
P2	69	F	V	V::100.00(61)
P2	71	F	L	L::100.00(61)
P2	72	F	V	V::100.00(61)
P2	73	F	D	D::100.00(57)
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P2	75	F	N	N::100.00(55)
P2	76	F	P	P::100.00(55)
P2	77	F	H	H::100.00(53)
P2	78	F	N	N::100.00(53)
P2	79	F	T	T::100.00(53)
P2	80	F	A	A::100.00(53)
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P2	87	F	D	D::100.00(57)
P2	89	F	S	S::100.00(57)
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P2	101	F	P	P::100.00(101)
P2	102	F	K	K::100.00(101)
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P2	105	F	V	V::100.00(96)
P2	106	F	P	P::100.00(96)

P2	107	F	N	N::100.00(96)
P2	108	F	L	L::100.00(96)
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P2	110	F	S	S::100.00(96)
P2	111	F	L	L::100.00(97)
P2	112	F	T	T::100.00(95)
P2	113	F	N	N::100.00(95)
P2	114	F	L	L::100.00(90)
P2	115	F	L	L::100.00(102)
P2	116	F	S	S::100.00(112)
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P2	119	F	L	L::100.00(114)
P2	120	F	S	S::100.00(114)
P2	121	F	W	W::100.00(115)
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P2	123	F	S	S::100.00(116)
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P2	127	F	S	S::100.00(133)
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P2	141	F	P	P::99.16(118)
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P2	144	F	L	L::100.00(112)
P2	145	F	I	I::92.86(104) V::7.14(8)
P2	146	F	G	G::99.11(111)
P2	147	F	S	S::100.00(112)
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P2	151	F	S	S::100.00(95)
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P2	154	F	V	V::100.00(101)
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P2	167	F	Q	Q::100.00(125)
P2	168	F	Y	Y::98.21(110)
P2	169	F	G	G::100.00(113)
P2	170	F	T	T::100.00(111)
P2	171	F	L	L::97.35(110)
P2	172	F	Q	Q::100.00(114)
P2	173	F	N	N::100.00(114)
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P2	175	F	H	H::100.00(97)
P2	176	F	D	D::100.00(97)
P2	177	F	S	S::100.00(97)
P2	178	F	C	C::100.00(99)
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P2	180	F	R	R::100.00(99)
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P2	184	F	V	V::98.99(98)
P2	185	F	S	S::100.00(99)
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P2	188	F	L	L::100.00(90)
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P2	192	F	T	T::100.00(92)
P2	193	F	Y	Y::95.96(95)
P2	194	F	G	G::100.00(92)
P2	195	F	W	W::96.74(89)
P2	196	F	K	K::100.00(92)
P2	197	F	L	L::100.00(119)
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P2	201	F	S	S::100.00(115)
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P2	205	F	I	I::100.00(148)
P2	206	F	L	L::100.00(142)
P2	207	F	G	G::100.00(146)
P2	209	F	R	R::100.00(163)
P2	210	F	K	K::100.00(140)

P2	211	F	I	I::99.29(139)
P2	212	F	P	P::100.00(139)
P2	213	F	M	M::100.00(138)
P2	214	F	G	G::100.00(136)
P2	215	F	V	V::100.00(124)
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P2	217	F	L	L::100.00(123)
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P2	222	F	L	L::100.00(116)
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P2	226	F	T	T::100.00(168)
P2	227	F	S	S::100.00(217)
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P2	232	F	V	V::100.00(243)
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P2	239	F	H	H::98.40(246)
P2	240	F	C	C::100.00(250)
P2	241	F	L	L::100.00(249)
P2	242	F	A	A::100.00(245)
P2	244	F	S	S::99.59(240)
P2	245	F	Y	Y::100.00(240)
P2	246	F	M	M::100.00(237)
P2	247	F	D	D::99.53(214)
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P2	250	F	V	V::100.00(287)
P2	251	F	L	L::100.00(286)
P2	252	F	G	G::100.00(265)
P2	253	F	A	A::100.00(215)
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P2	255	F	S	S::100.00(215)
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P2	261	F	S	S::99.66(295)
P2	262	F	L	L::100.00(309)
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P2	265	F	A	A::99.72(356)

P2	266	F	V	V::100.00(357)
P2	267	F	T	T::100.00(357)
P2	268	F	N	N::100.00(357)
P2	270	F	L	L::100.00(356)
P2	271	F	M	M::99.34(302)
P2	272	F	S	S::100.00(304)
P2	273	F	L	L::100.00(304)
P2	274	F	G	G::100.00(304)
P2	275	F	I	I::100.00(304)
P2	276	F	H	H::100.00(304)
P2	277	F	L	L::100.00(247)
P2	278	F	N	N::100.00(229)
P2	279	F	P	P::100.00(231)
P2	280	F	N	N::100.00(231)
P2	281	F	K	K::100.00(302)
P2	282	F	T	T::100.00(341)
P2	283	F	K	K::100.00(343)
P2	284	F	R	R::99.71(343)
P2	285	F	W	W::100.00(359)
P2	286	F	G	G::99.73(363)
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P2	288	F	S	S::100.00(359)
P2	289	F	L	L::100.00(359)
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P2	292	F	M	M::99.16(356)
P2	293	F	G	G::99.72(358)
P2	294	F	Y	Y::100.00(359)
P2	295	F	V	V::100.00(359)
P2	296	F	I	I::100.00(364)
P2	297	F	G	G::100.00(293)
P2	298	F	S	S::100.00(291)
P2	299	F	W	W::100.00(291)
P2	300	F	G	G::100.00(291)
P2	301	F	T	T::100.00(291)
P2	302	F	L	L::100.00(291)
P2	303	F	P	P::99.66(290)
P2	304	F	Q	Q::100.00(291)
P2	305	F	D	D::100.00(288)
P2	306	F	H	H::99.60(248)
P2	307	F	I	I::100.00(249)
P2	308	F	I	I::99.52(206)
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P2	314	F	C	C::100.00(146)
P2	316	F	R	R::100.00(190)
P2	317	F	K	K::100.00(190)
P2	318	F	L	L::100.00(190)
P2	319	F	P	P::100.00(191)

P2	320	F	V	V::100.00(191)
P2	321	F	N	N::100.00(192)
P2	322	F	R	R::100.00(192)
P2	323	F	P	P::100.00(192)
P2	324	F	I	I::100.00(192)
P2	325	F	D	D::100.00(192)
P2	326	F	W	W::99.48(191)
P2	327	F	K	K::100.00(192)
P2	328	F	V	V::100.00(190)
P2	329	F	C	C::100.00(190)
P2	330	F	Q	Q::100.00(190)
P2	331	F	R	R::100.00(100)
P2	332	F	I	I::100.00(73)
P2	333	F	V	V::100.00(55)
P2	334	F	G	G::100.00(58)
P2	335	F	L	L::100.00(55)
P2	336	F	L	L::100.00(55)
P2	337	F	G	G::100.00(60)
P2	339	F	A	A::96.67(58)
P2	340	F	A	A::100.00(60)
P2	341	F	P	P::100.00(60)
P2	343	F	T	T::100.00(60)
P2	344	F	Q	Q::100.00(60)
P2	345	F	C	C::100.00(55)
P2	346	F	G	G::100.00(59)
P2	347	F	Y	Y::100.00(59)
P2	348	F	P	P::100.00(59)
P2	349	F	A	A::100.00(59)
P2	350	F	L	L::100.00(59)
P2	351	F	M	M::100.00(59)
P2	352	F	P	P::100.00(59)
P2	353	F	L	L::100.00(66)
P2	354	F	Y	Y::100.00(74)
P2	355	F	A	A::100.00(74)
P2	356	F	C	C::100.00(73)
P2	357	F	I	I::100.00(73)
P2	358	F	Q	Q::97.26(71)
P2	359	F	A	A::100.00(29)
P2	360	F	K	K::100.00(29)
P2	361	F	Q	Q::100.00(29)
P2	362	F	A	A::100.00(29)
P2	364	F	T	T::100.00(29)
P2	366	F	S	S::100.00(29)
P2	367	F	P	P::100.00(29)
P2	368	F	T	T::100.00(29)
P2	369	F	Y	Y::100.00(27)
P2	370	F	K	K::100.00(27)
P2	371	F	A	A::100.00(27)
P2	373	F	L	L::100.00(27)
P2	374	F	S	S::100.00(27)
P2	375	F	K	K::100.00(27)

P2	376	F	Q	Q::100.00(27)
P2	377	F	Y	Y::100.00(27)
P2	378	F	V	V::100.00(27)
P2	379	F	N	N::100.00(29)
P2	380	F	L	L::100.00(29)
P2	381	F	Y	Y::100.00(29)
P2	382	F	P	P::100.00(28)
P2	383	F	V	V::100.00(25)
P2	384	F	A	A::100.00(25)
P2	385	F	R	R::100.00(25)
P2	386	F	Q	Q::100.00(21)
P2	387	F	R	R::100.00(21)
P2	388	F	P	P::100.00(27)
P2	389	F	G	G::100.00(27)
P2	390	F	L	L::100.00(27)
P2	391	F	C	C::96.30(26)
P2	392	F	Q	Q::100.00(27)
P2	393	F	V	V::100.00(27)
P2	395	F	A	A::100.00(26)
P2	396	F	D	D::100.00(23)
P2	397	F	A	A::100.00(23)
P2	398	F	T	T::100.00(23)
P2	399	F	P	P::100.00(23)
P2	400	F	T	T::100.00(23)
P2	401	F	G	G::100.00(19)
P2	402	F	W	W::100.00(19)
P2	403	F	G	G::100.00(13)
P2	404	F	L	L::100.00(9)
P2	405	F	A	A::100.00(15)
P2	406	F	I	I::100.00(15)
P2	407	F	G	G::100.00(15)
P2	408	F	H	H::100.00(15)
P2	409	F	Q	Q::100.00(15)
P2	410	F	R	R::100.00(15)
P2	411	F	M	M::100.00(15)
P2	412	F	R	R::100.00(15)
P2	413	F	G	G::100.00(16)
P2	414	F	T	T::100.00(16)
P2	416	F	A	A::93.75(15) L::6.25(1)
P2	417	F	A	A::100.00(16)
P2	418	F	P	P::100.00(16)
P2	419	F	L	L::100.00(16)
P2	420	F	P	P::100.00(16)
P2	421	F	I	I::100.00(16)
P2	422	F	H	H::100.00(16)
P2	423	F	T	T::100.00(16)
P2	424	F	A	A::100.00(16)
P2	425	F	E	E::100.00(16)
P2	426	F	L	L::100.00(16)
P2	427	F	L	L::100.00(14)
P2	428	F	A	A::100.00(14)

P2	429	F	A	A::100.00(14)
P2	430	F	C	C::100.00(14)
P2	432	F	A	A::100.00(18)
P2	433	F	R	R::100.00(18)
P2	434	F	S	S::100.00(18)
P2	435	F	R	R::100.00(18)
P2	436	F	S	S::100.00(18)
P2	437	F	G	G::100.00(12)
P2	438	F	A	A::100.00(12)
P2	439	F	K	K::91.67(11) N::8.33(1)
P2	440	F	L	L::91.67(11) I::8.33(1)
P2	441	F	I	I::91.67(11) L::8.33(1)
P2	442	F	G	G::100.00(12)
P2	443	F	T	T::100.00(12)
P2	444	F	D	D::100.00(12)
P2	445	F	N	N::100.00(12)
P2	446	F	S	S::100.00(12)
P2	447	F	V	V::100.00(12)
P2	448	F	V	V::100.00(12)
P2	449	F	L	L::100.00(12)
P2	450	F	S	S::100.00(12)
P2	451	F	R	R::100.00(12)
P2	452	F	K	K::100.00(12)
P2	453	F	Y	Y::100.00(5)
P2	454	F	T	T::100.00(5)
P2	455	F	S	S::100.00(14)
P2	457	F	P	P::100.00(14)
P2	458	F	W	W::100.00(14)
P2	459	F	L	L::100.00(14)
P2	460	F	L	L::100.00(14)
P2	461	F	G	G::100.00(13)
P2	462	F	C	C::100.00(13)
P2	463	F	T	T::100.00(13)
P2	464	F	A	A::100.00(13)
P2	465	F	N	N::100.00(13)
P2	466	F	W	W::100.00(13)
P2	467	F	I	I::100.00(13)
P2	468	F	L	L::100.00(13)
P2	469	F	R	R::100.00(13)
P2	470	F	G	G::100.00(13)
P2	471	F	T	T::100.00(13)
P2	472	F	S	S::100.00(17)
P2	474	F	V	V::100.00(18)
P2	475	F	Y	Y::100.00(18)
P2	476	F	V	V::100.00(19)
P2	477	F	P	P::100.00(19)
P2	478	F	S	S::100.00(19)
P2	479	F	A	A::100.00(20)
P2	480	F	L	L::100.00(20)
P2	481	F	N	N::100.00(16)
P2	482	F	P	P::100.00(16)

P2	483	F	A	A::100.00(26)
P2	484	F	D	D::100.00(26)
P2	485	F	D	D::76.92(20) V::23.08(6)
P2	486	F	P	P::100.00(26)
P2	487	F	S	S::100.00(26)
P2	488	F	R	R::100.00(26)
P2	489	F	G	G::100.00(26)
P2	490	F	R	R::100.00(26)
P2	491	F	L	L::100.00(26)
P2	492	F	G	G::100.00(26)
P2	493	F	L	L::100.00(26)
P2	494	F	Y	Y::100.00(26)
P2	495	F	R	R::100.00(26)
P2	496	F	P	P::100.00(26)
P2	497	F	L	L::100.00(26)
P2	498	F	L	L::100.00(26)
P2	499	F	R	R::100.00(26)
P2	500	F	L	L::100.00(26)
P2	501	F	P	P::100.00(26)
P2	502	F	Y	Y::100.00(26)
P2	503	F	R	R::100.00(26)
P2	504	F	P	P::100.00(17)
P2	505	F	T	T::100.00(17)
P2	506	F	T	T::100.00(17)
P2	507	F	G	G::100.00(17)
P2	508	F	R	R::100.00(17)
P2	509	F	T	T::100.00(17)
P2	510	F	S	S::100.00(17)
P2	511	F	L	L::100.00(17)
P2	512	F	Y	Y::100.00(17)
P2	513	F	A	A::100.00(38)
P2	514	F	D	D::100.00(38)
P2	515	F	S	S::100.00(38)
P2	516	F	P	P::100.00(38)
P2	517	F	S	S::100.00(38)
P2	518	F	V	V::100.00(38)
P2	519	F	P	P::100.00(38)
P2	520	F	S	S::100.00(38)
P2	521	F	H	H::100.00(38)
P2	522	F	L	L::100.00(30)
P2	523	F	P	P::100.00(30)
P2	524	F	V	V::100.00(30)
P2	525	F	R	R::100.00(30)
P2	526	F	V	V::100.00(30)
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(45)
P2	532	F	L	L::100.00(46)
P2	533	F	H	H::100.00(38)
P2	534	F	V	V::100.00(52)

P2	535	F	A	A::100.00(102)
P2	536	F	W	W::100.00(104)
P2	537	F	R	R::96.23(102)
P2	538	F	P	P::100.00(114)
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S2	5	F	H	H::100.00(1)
S2	6	F	Q	Q::100.00(1)
S2	7	F	T	T::100.00(1)
S2	8	F	L	L::100.00(1)
S2	9	F	Q	Q::100.00(1)
S2	10	F	D	D::100.00(1)
S2	11	F	P	P::100.00(1)
S2	12	F	R	R::100.00(1)
S2	13	F	V	V::100.00(1)
S2	14	F	R	R::100.00(1)
S2	15	F	G	G::100.00(1)
S2	16	F	L	L::100.00(1)
S2	17	F	Y	Y::100.00(1)
S2	19	F	P	P::100.00(43)
S2	20	F	A	A::100.00(43)
S2	21	F	G	G::100.00(43)
S2	22	F	G	G::100.00(43)
S2	23	F	S	S::100.00(43)
S2	24	F	S	S::100.00(43)
S2	25	F	S	S::100.00(50)
S2	26	F	G	G::100.00(50)
S2	27	F	T	T::100.00(50)
S2	28	F	L	L::98.08(51)
S2	29	F	N	N::100.00(52)
S2	30	F	P	P::100.00(52)
S2	31	F	V	V::100.00(54)
S2	32	F	P	P::100.00(54)
S2	33	F	N	N::98.21(55)
S2	34	F	I	I::98.21(55)
S2	35	F	A	A::96.43(54)
S2	36	F	S	S::100.00(56)
S2	37	F	H	H::100.00(61)
S2	38	F	I	I::100.00(61)
S2	39	F	S	S::100.00(61)
S2	40	F	S	S::100.00(61)
S2	41	F	I	I::100.00(61)
S2	42	F	S	S::96.72(59)
S2	43	F	S	S::98.36(60)
S2	44	F	R	R::100.00(61)
S2	45	F	T	T::96.72(59)
S2	46	F	G	G::97.96(48)
S2	47	F	D	D::100.00(49)
S2	48	F	P	P::100.00(51)
S2	49	F	A	A::98.04(50)
S2	50	F	P	P::96.08(49)
S2	51	F	N	N::100.00(51)
S2	52	F	M	M::100.00(49)

S2	53	F	E	E::100.00(43)
S2	54	F	N	N::100.00(43)
S2	55	F	I	I::100.00(43)
S2	56	F	T	T::100.00(56)
S2	57	F	S	S::100.00(55)
S2	58	F	G	G::100.00(55)
S2	60	F	L	L::100.00(53)
S2	61	F	G	G::100.00(49)
S2	62	F	P	P::100.00(49)
S2	63	F	L	L::100.00(50)
S2	64	F	L	L::100.00(50)
S2	65	F	V	V::100.00(52)
S2	66	F	L	L::100.00(40)
S2	67	F	Q	Q::100.00(40)
S2	68	F	A	A::100.00(61)
S2	69	F	G	G::100.00(61)
S2	72	F	L	L::100.00(61)
S2	73	F	L	L::100.00(61)
S2	74	F	T	T::100.00(54)
S2	75	F	R	R::100.00(55)
S2	76	F	I	I::100.00(55)
S2	77	F	L	L::100.00(53)
S2	78	F	T	T::100.00(53)
S2	79	F	I	I::100.00(53)
S2	80	F	P	P::100.00(53)
S2	81	F	Q	Q::100.00(54)
S2	82	F	S	S::100.00(52)
S2	83	F	L	L::100.00(51)
S2	84	F	D	D::100.00(52)
S2	85	F	S	S::100.00(52)
S2	86	F	W	W::98.33(59)
S2	87	F	W	W::98.21(55)
S2	88	F	T	T::100.00(57)
S2	89	F	S	S::100.00(57)
S2	90	F	L	L::100.00(57)
S2	91	F	N	N::100.00(68)
S2	93	F	L	L::100.00(84)
S2	94	F	G	G::100.00(85)
S2	95	F	G	G::100.00(85)
S2	96	F	S	S::92.94(79)
S2	97	F	P	P::95.29(81)
S2	98	F	V	V::100.00(83)
S2	99	F	C	C::98.80(82)
S2	100	F	L	L::97.85(91)
S2	101	F	G	G::100.00(100)
S2	102	F	Q	Q::100.00(101)
S2	103	F	N	N::100.00(101)
S2	104	F	S	S::100.00(102)
S2	105	F	Q	Q::100.00(90)
S2	106	F	S	S::100.00(96)
S2	107	F	P	P::100.00(96)

S2	108	F	T	T::100.00(96)
S2	109	F	S	S::100.00(96)
S2	110	F	N	N::97.92(94)
S2	111	F	H	H::100.00(96)
S2	112	F	S	S::100.00(96)
S2	113	F	P	P::97.89(93)
S2	114	F	T	T::100.00(95)
S2	115	F	S	S::100.00(90)
S2	116	F	C	C::100.00(111)
S2	117	F	P	P::98.98(97)
S2	118	F	P	P::100.00(98)
S2	119	F	I	I::93.81(106) T::6.19(7)
S2	120	F	C	C::100.00(114)
S2	121	F	P	P::99.13(114)
S2	122	F	G	G::100.00(116)
S2	123	F	Y	Y::100.00(116)
S2	124	F	R	R::98.28(114)
S2	125	F	W	W::100.00(115)
S2	126	F	M	M::100.00(133)
S2	127	F	C	C::98.50(131)
S2	128	F	L	L::100.00(133)
S2	129	F	R	R::100.00(135)
S2	130	F	R	R::100.00(133)
S2	132	F	I	I::100.00(133)
S2	133	F	I	I::100.00(131)
S2	135	F	L	L::100.00(124)
S2	137	F	I	I::99.17(120)
S2	138	F	L	L::100.00(120)
S2	139	F	L	L::100.00(121)
S2	140	F	L	L::100.00(116)
S2	141	F	C	C::99.15(117)
S2	142	F	L	L::100.00(116)
S2	143	F	I	I::100.00(104)
S2	145	F	L	L::99.11(111)
S2	146	F	L	L::99.11(111)
S2	147	F	V	V::100.00(112)
S2	148	F	L	L::100.00(112)
S2	149	F	L	L::100.00(102)
S2	150	F	D	D::100.00(91)
S2	151	F	Y	Y::100.00(91)
S2	152	F	Q	Q::100.00(94)
S2	153	F	G	G::100.00(94)
S2	154	F	M	M::100.00(102)
S2	155	F	L	L::100.00(96)
S2	156	F	P	P::100.00(100)
S2	157	F	V	V::99.12(112)
S2	158	F	C	C::99.12(112)
S2	159	F	P	P::100.00(113)
S2	160	F	L	L::100.00(113)
S2	161	F	I	I::100.00(119)
S2	162	F	P	P::100.00(137)

S2	163	F	G	G::100.00(133)
S2	164	F	S	S::99.09(109)
S2	165	F	T	T::98.21(110)
S2	166	F	T	T::100.00(124)
S2	167	F	T	T::100.00(125)
S2	168	F	S	S::100.00(125)
S2	169	F	T	T::100.00(113)
S2	170	F	G	G::100.00(113)
S2	171	F	P	P::100.00(111)
S2	172	F	C	C::100.00(114)
S2	173	F	K	K::96.49(110)
S2	174	F	T	T::100.00(114)
S2	175	F	C	C::100.00(96)
S2	176	F	T	T::100.00(97)
S2	177	F	T	T::100.00(97)
S2	178	F	P	P::100.00(99)
S2	179	F	A	A::100.00(99)
S2	180	F	Q	Q::100.00(99)
S2	181	F	G	G::100.00(99)
S2	182	F	N	N::94.95(94) T::5.05(5)
S2	183	F	S	S::100.00(99)
S2	184	F	M	M::98.99(98)
S2	185	F	F	F::94.95(94) Y::5.05(5)
S2	186	F	P	P::100.00(99)
S2	187	F	S	S::100.00(98)
S2	188	F	C	C::100.00(98)
S2	189	F	C	C::98.89(89)
S2	190	F	C	C::100.00(92)
S2	191	F	T	T::100.00(91)
S2	192	F	K	K::100.00(92)
S2	193	F	P	P::100.00(92)
S2	194	F	T	T::95.65(88)
S2	195	F	D	D::100.00(92)
S2	196	F	G	G::100.00(92)
S2	197	F	N	N::100.00(92)
S2	198	F	C	C::100.00(119)
S2	199	F	T	T::100.00(119)
S2	200	F	C	C::100.00(119)
S2	201	F	I	I::100.00(119)
S2	202	F	P	P::100.00(115)
S2	203	F	I	I::99.07(106)
S2	204	F	P	P::100.00(159)
S2	205	F	S	S::100.00(158)
S2	206	F	S	S::100.00(148)
S2	207	F	W	W::100.00(142)
S2	208	F	A	A::100.00(146)
S2	210	F	A	A::96.86(154)
S2	211	F	K	K::99.29(139)
S2	212	F	Y	Y::97.14(136)
S2	213	F	L	L::99.28(137)
S2	214	F	W	W::100.00(136)

S2	215	F	E	E::100.00(124)
S2	216	F	W	W::100.00(123)
S2	217	F	A	A::100.00(122)
S2	218	F	S	S::100.00(119)
S2	219	F	V	V::97.48(116)
S2	220	F	R	R::98.33(118)
S2	222	F	S	S::100.00(116)
S2	223	F	W	W::100.00(116)
S2	224	F	L	L::100.00(168)
S2	225	F	S	S::100.00(168)
S2	226	F	L	L::100.00(168)
S2	227	F	L	L::99.40(166)
S2	228	F	V	V::100.00(224)
S2	229	F	P	P::100.00(242)
S2	231	F	V	V::100.00(243)
S2	232	F	Q	Q::100.00(243)
S2	233	F	W	W::99.59(242)
S2	235	F	A	A::98.77(241)
S2	236	F	G	G::100.00(244)
S2	237	F	L	L::99.59(243)
S2	238	F	S	S::100.00(251)
S2	239	F	P	P::100.00(252)
S2	240	F	T	T::99.20(248)
S2	241	F	V	V::100.00(250)
S2	242	F	W	W::100.00(247)
S2	243	F	L	L::100.00(241)
S2	244	F	S	S::100.00(241)
S2	245	F	A	A::98.76(238)
S2	246	F	I	I::100.00(238)
S2	247	F	W	W::100.00(235)
S2	248	F	M	M::99.53(214)
S2	249	F	M	M::100.00(274)
S2	250	F	W	W::100.00(287)
S2	251	F	Y	Y::100.00(287)
S2	252	F	W	W::100.00(266)
S2	253	F	G	G::100.00(265)
S2	254	F	P	P::100.00(215)
S2	255	F	S	S::100.00(215)
S2	256	F	L	L::100.00(211)
S2	257	F	Y	Y::100.00(254)
S2	258	F	N	N::98.82(251)
S2	259	F	I	I::100.00(254)
S2	260	F	L	L::100.00(254)
S2	261	F	S	S::99.32(294)
S2	262	F	P	P::100.00(303)
S2	264	F	I	I::99.03(306)
S2	265	F	P	P::99.44(354)
S2	266	F	L	L::100.00(357)
S2	267	F	L	L::100.00(357)
S2	268	F	P	P::100.00(357)
S2	269	F	I	I::100.00(356)

S2	271	F	L	L::98.03(298)
S2	272	F	C	C::100.00(304)
S2	273	F	L	L::100.00(304)
S2	274	F	W	W::100.00(304)
S2	275	F	V	V::100.00(304)
S2	276	F	Y	Y::100.00(304)
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X	1	F	M	M::100.00(14)
X	2	F	A	A::100.00(14)
X	3	F	A	A::100.00(14)
X	4	F	R	R::100.00(14)
X	5	F	L	L::100.00(13)
X	6	F	Y	Y::100.00(13)
X	7	F	C	C::100.00(13)
X	8	F	Q	Q::100.00(13)
X	9	F	L	L::100.00(13)
X	10	F	D	D::100.00(13)
X	11	F	S	S::100.00(13)
X	12	F	S	S::100.00(13)
X	13	F	R	R::100.00(13)
X	14	F	D	D::100.00(13)
X	15	F	V	V::100.00(17)
X	16	F	L	L::100.00(18)
X	17	F	C	C::100.00(18)
X	18	F	L	L::100.00(18)
X	19	F	R	R::100.00(19)
X	20	F	P	P::100.00(19)
X	21	F	V	V::100.00(19)
X	22	F	G	G::100.00(19)
X	23	F	A	A::100.00(20)
X	24	F	E	E::100.00(20)
X	25	F	S	S::100.00(16)
X	26	F	R	R::100.00(17)
X	27	F	G	G::100.00(26)
X	28	F	R	R::100.00(26)
X	29	F	P	P::100.00(26)
X	30	F	L	L::100.00(26)
X	31	F	A	A::100.00(26)
X	32	F	R	R::100.00(26)
X	33	F	P	P::100.00(26)
X	34	F	L	L::100.00(26)
X	35	F	G	G::100.00(26)
X	36	F	A	A::100.00(26)
X	37	F	L	L::100.00(26)
X	38	F	S	S::100.00(26)
X	39	F	S	S::100.00(26)
X	40	F	P	P::100.00(26)
X	41	F	S	S::100.00(26)
X	42	F	P	P::100.00(26)
X	43	F	S	S::100.00(26)
X	44	F	A	A::100.00(26)
X	45	F	V	V::100.00(26)

X	46	F	P	P::100.00(26)
X	47	F	S	S::100.00(23)
X	48	F	D	D::100.00(17)
X	49	F	H	H::100.00(17)
X	50	F	G	G::100.00(17)
X	51	F	A	A::100.00(17)
X	52	F	H	H::100.00(17)
X	53	F	L	L::100.00(17)
X	54	F	S	S::100.00(17)
X	55	F	L	L::100.00(17)
X	56	F	R	R::100.00(38)
X	57	F	G	G::100.00(38)
X	58	F	L	L::100.00(38)
X	59	F	P	P::100.00(38)
X	60	F	V	V::100.00(38)
X	61	F	C	C::100.00(38)
X	62	F	A	A::100.00(38)
X	64	F	S	S::100.00(38)
X	65	F	S	S::100.00(30)
X	66	F	A	A::100.00(30)
X	67	F	G	G::90.00(27) S::10.00(3)
X	68	F	P	P::100.00(30)
X	69	F	C	C::100.00(30)
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(45)
X	75	F	S	S::100.00(45)
X	76	F	A	A::100.00(38)
X	77	F	R	R::100.00(42)
X	78	F	C	C::95.52(64)
X	79	F	M	M::100.00(103)
X	80	F	E	E::100.00(105)
X	81	F	T	T::99.06(105)
X	82	F	T	T::99.12(113)
X	83	F	V	V::100.00(114)
X	84	F	N	N::99.12(113)
X	85	F	A	A::100.00(114)
X	86	F	H	H::100.00(114)
X	87	F	Q	Q::98.25(112)
X	88	F	S	S::93.86(107) F::6.14(7)
X	89	F	L	L::99.12(113)
X	90	F	P	P::100.00(114)
X	91	F	K	K::85.09(97) M::14.04(16)
X	92	F	V	V::100.00(114)
X	93	F	L	L::100.00(115)
X	94	F	H	H::99.13(114)
X	95	F	K	K::100.00(126)
X	96	F	R	R::100.00(132)
X	97	F	T	T::100.00(134)
X	98	F	L	L::100.00(134)

X	99	F	G	G::100.00(136)
X	100	F	L	L::100.00(136)
X	101	F	P	P::92.54(124) S::5.97(8)
X	102	F	A	A::94.56(139) V::5.44(8)
X	103	F	M	M::100.00(150)
X	104	F	S	S::100.00(149)
X	105	F	T	T::100.00(160)
X	106	F	T	T::100.00(160)
X	107	F	D	D::99.38(159)
X	108	F	L	L::100.00(160)
X	109	F	E	E::100.00(161)
X	110	F	A	A::100.00(161)
X	111	F	Y	Y::100.00(161)
X	113	F	K	K::100.00(162)
X	114	F	D	D::100.00(162)
X	115	F	C	C::99.38(161)
X	116	F	V	V::93.79(151) L::6.21(10)
X	118	F	K	K::100.00(162)
X	119	F	D	D::100.00(162)
X	120	F	W	W::99.38(161)
X	121	F	E	E::100.00(176)
X	122	F	E	E::100.00(176)
X	123	F	L	L::100.00(175)
X	124	F	G	G::100.00(162)
X	125	F	E	E::98.40(185)
X	126	F	E	E::100.00(165)
X	127	F	I	I::100.00(166)
X	128	F	R	R::100.00(125)
X	129	F	L	L::100.00(124)
X	130	F	M	M::94.87(111) K::5.13(6)
X	131	F	I	I::94.87(111) V::5.13(6)
X	133	F	V	V::100.00(117)
X	134	F	L	L::100.00(117)
X	135	F	G	G::100.00(118)
X	136	F	G	G::100.00(118)
X	137	F	C	C::100.00(118)
X	138	F	R	R::100.00(122)
X	139	F	H	H::100.00(122)
X	140	F	K	K::100.00(122)
X	141	F	L	L::100.00(122)
X	142	F	V	V::100.00(123)
X	143	F	C	C::99.19(122)
X	144	F	A	A::100.00(123)
X	145	F	P	P::100.00(102)
X	146	F	F	F::94.00(94) A::6.00(6)
X	147	F	S	S::94.00(94) P::6.00(6)
X	148	F	C	C::100.00(103)
X	149	F	N	N::100.00(102)
X	152	F	T	T::100.00(86)
X	153	F	S	S::100.00(84)
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C	1	F	M	M::100.00(76)

C	2	F	D	D::100.00(77)
C	3	F	I	I::100.00(79)
C	4	F	D	D::100.00(80)
C	5	F	P	P::100.00(81)
C	6	F	Y	Y::100.00(82)
C	7	F	K	K::100.00(82)
C	8	F	E	E::100.00(83)
C	10	F	G	G::100.00(78)
C	11	F	A	A::100.00(78)
C	12	F	T	T::100.00(78)
C	13	F	A	A::94.87(74) V::5.13(4)
C	14	F	E	E::100.00(78)
C	15	F	L	L::100.00(79)
C	16	F	L	L::100.00(78)
C	17	F	S	S::100.00(78)
C	19	F	L	L::100.00(79)
C	20	F	P	P::100.00(79)
C	21	F	N	N::92.11(70) S::7.89(6)
C	22	F	D	D::100.00(76)
C	25	F	P	P::100.00(76)
C	26	F	S	S::100.00(76)
C	27	F	V	V::100.00(76)
C	28	F	R	R::98.68(75)
C	29	F	D	D::100.00(76)
C	30	F	L	L::100.00(77)
C	31	F	L	L::100.00(94)
C	32	F	D	D::100.00(87)
C	33	F	T	T::100.00(95)
C	34	F	A	A::100.00(95)
C	35	F	S	S::100.00(89)
C	36	F	A	A::100.00(88)
C	37	F	L	L::100.00(88)
C	38	F	Y	Y::100.00(120)
C	39	F	R	R::100.00(102)
C	40	F	D	D::94.12(96) E::5.88(6)
C	41	F	A	A::100.00(102)
C	42	F	L	L::100.00(101)
C	43	F	E	E::100.00(100)
C	44	F	S	S::100.00(100)
C	45	F	P	P::100.00(70)
C	46	F	E	E::100.00(70)
C	47	F	H	H::100.00(86)
C	48	F	C	C::100.00(86)
C	49	F	S	S::100.00(86)
C	50	F	P	P::100.00(90)
C	51	F	H	H::100.00(90)
C	52	F	H	H::100.00(90)
C	53	F	T	T::100.00(88)
C	54	F	A	A::98.86(87)
C	55	F	L	L::100.00(87)
C	56	F	R	R::100.00(86)

C	57	F	Q	Q::100.00(86)
C	58	F	E	E::96.51(83)
C	59	F	I	I::100.00(106)
C	60	F	L	L::100.00(106)
C	61	F	C	C::99.18(121)
C	62	F	W	W::100.00(134)
C	63	F	G	G::100.00(133)
C	64	F	E	E::99.24(130)
C	65	F	L	L::100.00(142)
C	66	F	M	M::99.30(141)
C	67	F	T	T::100.00(142)
C	68	F	L	L::100.00(142)
C	69	F	A	A::100.00(162)
C	70	F	T	T::100.00(162)
C	71	F	W	W::100.00(162)
C	72	F	V	V::100.00(162)
C	73	F	G	G::100.00(162)
C	74	F	N	N::98.77(160)
C	75	F	N	N::100.00(186)
C	76	F	L	L::100.00(187)
C	77	F	E	E::100.00(187)
C	78	F	D	D::100.00(187)
C	79	F	P	P::100.00(186)
C	80	F	A	A::98.82(168)
C	81	F	S	S::100.00(171)
C	82	F	R	R::100.00(171)
C	83	F	D	D::98.77(161)
C	84	F	L	L::100.00(131)
C	85	F	V	V::100.00(131)
C	86	F	V	V::100.00(135)
C	87	F	N	N::97.78(132)
C	88	F	Y	Y::97.04(131)
C	89	F	V	V::100.00(135)
C	90	F	N	N::100.00(142)
C	91	F	T	T::100.00(142)
C	92	F	N	N::100.00(142)
C	93	F	M	M::98.06(152)
C	94	F	G	G::100.00(153)
C	95	F	L	L::100.00(154)
C	96	F	K	K::100.00(138)
C	97	F	I	I::97.22(140)
C	98	F	R	R::100.00(144)
C	99	F	Q	Q::98.67(148)
C	100	F	L	L::100.00(150)
C	101	F	L	L::99.33(149)
C	102	F	W	W::100.00(150)
C	104	F	H	H::100.00(169)
C	105	F	I	I::100.00(169)
C	106	F	S	S::100.00(166)
C	107	F	C	C::100.00(164)
C	108	F	L	L::100.00(164)

C	109	F	T	T::100.00(164)
C	111	F	G	G::100.00(157)
C	112	F	R	R::99.36(156)
C	113	F	E	E::100.00(157)
C	114	F	T	T::100.00(146)
C	115	F	V	V::100.00(146)
C	116	F	L	L::97.95(143)
C	117	F	E	E::100.00(138)
C	118	F	Y	Y::100.00(155)
C	119	F	L	L::99.42(170)
C	120	F	V	V::99.45(180)
C	121	F	S	S::99.45(180)
C	123	F	G	G::100.00(197)
C	124	F	V	V::100.00(196)
C	125	F	W	W::100.00(180)
C	126	F	I	I::100.00(199)
C	127	F	R	R::99.50(198)
C	128	F	T	T::100.00(199)
C	129	F	P	P::100.00(198)
C	130	F	P	P::99.50(198)
C	131	F	P	P::97.99(195)
C	132	F	Y	Y::100.00(205)
C	133	F	R	R::100.00(206)
C	134	F	P	P::99.51(205)
C	135	F	P	P::100.00(214)
C	136	F	N	N::100.00(214)
C	137	F	A	A::100.00(214)
C	138	F	P	P::100.00(213)
C	139	F	I	I::100.00(209)
C	140	F	L	L::100.00(209)
C	141	F	S	S::100.00(209)
C	142	F	T	T::99.51(202)
C	143	F	L	L::100.00(208)
C	144	F	P	P::100.00(208)
C	145	F	E	E::100.00(220)
C	146	F	T	T::99.54(216)
C	147	F	T	T::99.16(235)
C	148	F	V	V::99.58(236)
C	149	F	V	V::100.00(227)
C	150	F	R	R::99.56(225)
C	151	F	R	R::100.00(226)
C	152	F	R	R::100.00(225)
C	153	F	G	G::100.00(210)
C	154	F	R	R::99.54(218)
C	155	F	G	G::100.00(225)
C	156	F	R	R::100.00(241)
C	157	F	S	S::100.00(227)
C	158	F	P	P::100.00(229)
C	159	F	R	R::99.57(233)
C	160	F	R	R::100.00(215)
C	161	F	R	R::100.00(215)

C	162	F	T	T::100.00(218)
C	163	F	P	P::100.00(217)
C	164	F	S	S::100.00(217)
C	165	F	P	P::100.00(217)
C	166	F	R	R::100.00(216)
C	167	F	R	R::100.00(189)
C	168	F	R	R::100.00(173)
C	169	F	R	R::100.00(163)
C	170	F	S	S::98.77(161)
C	171	F	Q	Q::100.00(163)
C	172	F	S	S::100.00(158)
C	173	F	P	P::100.00(157)
C	174	F	R	R::100.00(153)
C	175	F	R	R::100.00(131)
C	176	F	R	R::100.00(131)
C	177	F	R	R::100.00(137)
C	178	F	S	S::100.00(137)
C	179	F	Q	Q::99.27(136)
C	180	F	S	S::100.00(137)
C	181	F	R	R::99.23(129)
C	182	F	E	E::99.26(135)
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P1	1	F	M	M::100.00(214)
P1	2	F	P	P::100.00(214)
P1	3	F	L	L::99.06(210)
P1	4	F	S	S::100.00(209)
P1	5	F	Y	Y::100.00(209)
P1	6	F	Q	Q::100.00(207)
P1	7	F	H	H::99.52(206)
P1	9	F	R	R::100.00(209)
P1	10	F	K	K::97.73(215)
P1	11	F	L	L::99.53(213)
P1	12	F	L	L::100.00(237)
P1	13	F	L	L::100.00(227)
P1	14	F	L	L::100.00(226)
P1	15	F	D	D::99.56(225)
P1	16	F	D	D::100.00(225)
P1	17	F	E	E::100.00(225)
P1	18	F	A	A::100.00(210)
P1	19	F	E	E::99.56(224)
P1	20	F	A	A::99.16(235)
P1	21	F	G	G::100.00(237)
P1	22	F	P	P::100.00(228)
P1	23	F	L	L::100.00(229)
P1	24	F	E	E::99.57(233)
P1	25	F	E	E::100.00(215)
P1	26	F	E	E::99.53(214)
P1	27	F	L	L::100.00(218)
P1	28	F	P	P::100.00(217)
P1	29	F	R	R::99.54(216)
P1	30	F	L	L::100.00(217)
P1	31	F	A	A::100.00(206)

P1	32	F	D	D::100.00(189)
P1	33	F	E	E::100.00(173)
P1	34	F	D	D::98.16(160)
P1	35	F	L	L::98.77(161)
P1	36	F	N	N::100.00(164)
P1	37	F	R	R::100.00(158)
P1	38	F	R	R::100.00(157)
P1	39	F	V	V::100.00(142)
P1	40	F	A	A::100.00(131)
P1	41	F	E	E::100.00(131)
P1	42	F	D	D::100.00(137)
P1	43	F	L	L::100.00(137)
P1	44	F	N	N::100.00(137)
P1	45	F	L	L::100.00(136)
P1	46	F	G	G::98.51(132)
P1	47	F	N	N::99.26(135)
P1	48	F	L	L::99.35(154)
P1	49	F	N	N::100.00(144)
P1	50	F	V	V::100.00(144)
P1	51	F	S	S::100.00(130)
P1	52	F	I	I::100.00(154)
P1	53	F	P	P::100.00(155)
P1	54	F	W	W::100.00(154)
P1	55	F	T	T::100.00(154)
P1	56	F	H	H::100.00(154)
P1	57	F	K	K::99.28(137)
P1	58	F	V	V::100.00(138)
P1	59	F	G	G::100.00(125)
P1	60	F	N	N::99.37(157)
P1	62	F	T	T::100.00(140)
P1	63	F	G	G::100.00(141)
P1	64	F	L	L::100.00(139)
P1	65	F	Y	Y::100.00(141)
P1	66	F	S	S::100.00(131)
P1	67	F	S	S::100.00(124)
P1	68	F	T	T::100.00(128)
P1	69	F	V	V::99.18(121)
P1	70	F	P	P::100.00(119)
P1	71	F	I	I::95.80(114)
P1	73	F	N	N::100.00(125)
P1	74	F	P	P::100.00(125)
P1	75	F	E	E::99.18(121)
P1	76	F	W	W::100.00(144)
P1	77	F	Q	Q::99.31(144)
P1	78	F	T	T::100.00(146)
P1	79	F	P	P::100.00(146)
P1	80	F	S	S::100.00(146)
P1	82	F	P	P::100.00(146)
P1	83	F	K	K::99.32(145)
P1	84	F	I	I::100.00(163)
P1	85	F	H	H::100.00(163)

P1	86	F	L	L::100.00(154)
P1	87	F	K	K::99.35(153)
P1	88	F	E	E::98.70(152)
P1	89	F	D	D::100.00(154)
P1	90	F	I	I::100.00(154)
P1	91	F	I	I::100.00(141)
P1	92	F	N	N::100.00(141)
P1	93	F	R	R::100.00(141)
P1	94	F	C	C::100.00(147)
P1	95	F	Q	Q::100.00(147)
P1	96	F	Q	Q::100.00(145)
P1	98	F	V	V::100.00(129)
P1	99	F	G	G::99.25(133)
P1	100	F	P	P::100.00(135)
P1	101	F	L	L::100.00(125)
P1	102	F	T	T::100.00(125)
P1	103	F	V	V::100.00(123)
P1	104	F	N	N::100.00(123)
P1	105	F	E	E::93.50(115) K::6.50(8)
P1	106	F	K	K::100.00(88)
P1	107	F	R	R::100.00(97)
P1	108	F	R	R::100.00(97)
P1	109	F	L	L::100.00(93)
P1	110	F	K	K::100.00(100)
P1	111	F	L	L::100.00(97)
P1	112	F	I	I::100.00(100)
P1	113	F	M	M::100.00(99)
P1	114	F	P	P::100.00(89)
P1	115	F	A	A::100.00(91)
P1	116	F	R	R::100.00(91)
P1	118	F	Y	Y::100.00(102)
P1	119	F	P	P::100.00(102)
P1	120	F	N	N::100.00(102)
P1	121	F	S	S::100.00(96)
P1	122	F	T	T::100.00(95)
P1	123	F	K	K::100.00(88)
P1	124	F	Y	Y::100.00(88)
P1	125	F	L	L::100.00(65)
P1	126	F	P	P::100.00(77)
P1	127	F	L	L::100.00(77)
P1	128	F	E	E::100.00(77)
P1	129	F	K	K::100.00(82)
P1	130	F	G	G::100.00(82)
P1	131	F	I	I::100.00(82)
P1	132	F	K	K::98.59(70)
P1	133	F	P	P::100.00(71)
P1	134	F	Y	Y::100.00(65)
P1	135	F	Y	Y::100.00(65)
P1	136	F	P	P::100.00(65)
P1	137	F	D	D::98.46(64)
P1	138	F	H	H::100.00(65)

P1	139	F	V	V::100.00(59)
P1	140	F	V	V::100.00(59)
P1	141	F	N	N::98.33(59)
P1	142	F	H	H::100.00(60)
P1	143	F	Y	Y::100.00(60)
P1	145	F	Q	Q::100.00(60)
P1	146	F	T	T::100.00(60)
P1	147	F	R	R::98.67(74)
P1	148	F	H	H::97.44(76)
P1	149	F	Y	Y::100.00(74)
P1	150	F	L	L::100.00(74)
P1	151	F	H	H::100.00(82)
P1	152	F	T	T::100.00(82)
P1	153	F	L	L::100.00(82)
P1	154	F	W	W::100.00(82)
P1	155	F	K	K::98.78(81)
P1	156	F	A	A::100.00(73)
P1	157	F	G	G::100.00(73)
P1	158	F	I	I::100.00(75)
P1	159	F	L	L::100.00(66)
P1	160	F	Y	Y::100.00(66)
P1	161	F	K	K::100.00(71)
P1	162	F	R	R::100.00(81)
P1	163	F	E	E::100.00(81)
P1	164	F	T	T::100.00(81)
P1	165	F	T	T::100.00(95)
P1	166	F	R	R::100.00(95)
P1	167	F	S	S::100.00(84)
P1	168	F	A	A::100.00(84)
P1	169	F	S	S::100.00(84)
P1	171	F	C	C::100.00(84)
P1	172	F	G	G::98.81(83)
P1	173	F	S	S::100.00(90)
P1	174	F	P	P::100.00(95)
P1	175	F	Y	Y::100.00(90)
P1	176	F	S	S::100.00(87)
P1	177	F	W	W::100.00(87)
P1	178	F	E	E::100.00(82)
P1	179	F	Q	Q::98.78(81)
P1	180	F	E	E::100.00(82)
P1	181	F	L	L::100.00(82)
P1	182	F	H	H::100.00(82)
P1	183	F	H	H::100.00(90)
P1	184	F	G	G::100.00(91)
P1	185	F	R	R::100.00(109)
P1	186	F	L	L::100.00(114)
P1	187	F	V	V::100.00(115)
P1	188	F	I	I::100.00(115)
P1	189	F	K	K::100.00(114)
P1	190	F	T	T::100.00(114)
P1	191	F	S	S::100.00(114)

P1	192	F	Q	Q::100.00(118)
P1	193	F	R	R::100.00(121)
P1	194	F	H	H::100.00(113)
P1	195	F	G	G::100.00(113)
P1	196	F	D	D::100.00(113)
P1	197	F	E	E::100.00(93)
P1	198	F	P	P::100.00(93)
P1	200	F	C	C::100.00(99)
P1	201	F	S	S::100.00(99)
P1	202	F	Q	Q::100.00(99)
P1	203	F	P	P::100.00(100)
P1	204	F	S	S::100.00(100)
P1	205	F	G	G::100.00(100)
P1	206	F	I	I::100.00(100)
P1	207	F	L	L::100.00(97)
P1	208	F	S	S::100.00(96)
P1	209	F	R	R::100.00(104)
P1	210	F	S	S::100.00(105)
P1	211	F	S	S::100.00(88)
P1	212	F	V	V::100.00(88)
P1	213	F	G	G::97.67(84)
P1	214	F	P	P::100.00(86)
P1	215	F	C	C::100.00(75)
P1	216	F	I	I::100.00(75)
P1	217	F	R	R::100.00(75)
P1	218	F	S	S::100.00(75)
P1	219	F	Q	Q::100.00(75)
P1	221	F	K	K::100.00(75)
P1	222	F	Q	Q::100.00(69)
P1	223	F	S	S::100.00(69)
P1	224	F	R	R::100.00(60)
P1	225	F	L	L::100.00(73)
P1	226	F	G	G::100.00(73)
P1	227	F	L	L::100.00(73)
P1	228	F	Q	Q::100.00(55)
P1	229	F	P	P::100.00(55)
P1	230	F	H	H::100.00(55)
P1	231	F	Q	Q::100.00(52)
P1	232	F	G	G::100.00(47)
P1	233	F	P	P::100.00(46)
P1	234	F	L	L::100.00(46)
P1	235	F	A	A::100.00(40)
P1	236	F	T	T::100.00(40)
P1	237	F	S	S::100.00(43)
P1	238	F	Q	Q::100.00(43)
P1	239	F	P	P::100.00(57)
P1	240	F	G	G::100.00(57)
P1	241	F	R	R::100.00(60)
P1	242	F	S	S::100.00(53)
P1	243	F	G	G::100.00(53)
P1	244	F	S	S::100.00(53)

P1	245	F	I	I::100.00(56)
P1	246	F	R	R::100.00(56)
P1	247	F	A	A::100.00(56)
P1	248	F	R	R::100.00(56)
P1	249	F	V	V::100.00(48)
P1	250	F	H	H::100.00(48)
P1	251	F	S	S::100.00(48)
P1	252	F	P	P::100.00(47)
P1	253	F	T	T::100.00(48)
P1	254	F	R	R::100.00(54)
P1	255	F	R	R::100.00(54)
P1	256	F	C	C::100.00(54)
P1	258	F	G	G::100.00(47)
P1	259	F	V	V::100.00(44)
P1	260	F	E	E::100.00(44)
P1	261	F	P	P::100.00(44)
P1	262	F	S	S::100.00(52)
P1	263	F	G	G::100.00(52)
P1	264	F	S	S::100.00(52)
P1	265	F	G	G::100.00(54)
P1	266	F	P	P::100.00(50)
P1	267	F	I	I::100.00(56)
P1	268	F	G	G::100.00(56)
P1	269	F	H	H::100.00(65)
P1	270	F	S	S::100.00(65)
P1	271	F	A	A::100.00(65)
P1	272	F	S	S::100.00(65)
P1	273	F	S	S::100.00(65)
P1	274	F	S	S::100.00(63)
P1	275	F	S	S::100.00(55)
P1	276	F	S	S::100.00(56)
P1	277	F	C	C::100.00(61)
P1	278	F	L	L::100.00(61)
P1	279	F	H	H::100.00(61)
P1	280	F	Q	Q::100.00(61)
P1	281	F	S	S::100.00(61)
P1	282	F	A	A::100.00(61)
P1	283	F	V	V::100.00(61)
P1	284	F	R	R::98.36(60)
P1	285	F	K	K::100.00(61)
P1	286	F	A	A::100.00(58)
P1	287	F	A	A::100.00(58)
P1	288	F	Y	Y::100.00(44)
P1	289	F	S	S::100.00(44)
P1	290	F	H	H::100.00(44)
P1	291	F	L	L::100.00(41)
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S1	1	F	Y	Y::98.78(81)
S1	2	F	I	I::100.00(90)
S1	3	F	M	M::100.00(91)
S1	4	F	G	G::100.00(91)
S1	5	F	G	G::100.00(114)

S1	6	F	W	W::100.00(115)
S1	7	F	S	S::100.00(115)
S1	8	F	S	S::100.00(115)
S1	9	F	K	K::100.00(114)
S1	10	F	P	P::100.00(114)
S1	11	F	R	R::100.00(114)
S1	12	F	K	K::100.00(121)
S1	13	F	G	G::100.00(113)
S1	14	F	M	M::100.00(113)
S1	15	F	G	G::100.00(113)
S1	16	F	T	T::100.00(113)
S1	17	F	N	N::100.00(93)
S1	18	F	L	L::100.00(91)
S1	19	F	S	S::100.00(99)
S1	20	F	V	V::100.00(99)
S1	21	F	P	P::100.00(99)
S1	22	F	N	N::100.00(100)
S1	23	F	P	P::100.00(100)
S1	24	F	L	L::100.00(100)
S1	25	F	G	G::100.00(100)
S1	28	F	P	P::100.00(103)
S1	29	F	D	D::100.00(105)
S1	30	F	H	H::100.00(96)
S1	31	F	Q	Q::100.00(88)
S1	32	F	L	L::100.00(88)
S1	33	F	D	D::100.00(86)
S1	34	F	P	P::100.00(79)
S1	35	F	A	A::100.00(75)
S1	37	F	G	G::100.00(75)
S1	38	F	A	A::100.00(75)
S1	39	F	N	N::100.00(75)
S1	40	F	S	S::100.00(75)
S1	41	F	N	N::100.00(75)
S1	42	F	N	N::100.00(69)
S1	43	F	P	P::98.55(68)
S1	44	F	D	D::100.00(60)
S1	45	F	W	W::100.00(73)
S1	46	F	D	D::100.00(73)
S1	48	F	N	N::100.00(55)
S1	49	F	P	P::100.00(55)
S1	50	F	I	I::100.00(55)
S1	51	F	K	K::100.00(52)
S1	52	F	D	D::100.00(47)
S1	53	F	H	H::100.00(46)
S1	54	F	W	W::100.00(46)
S1	55	F	P	P::100.00(40)
S1	56	F	Q	Q::100.00(43)
S1	57	F	A	A::100.00(43)
S1	58	F	N	N::100.00(57)
S1	59	F	Q	Q::100.00(57)
S1	60	F	V	V::100.00(57)

S1	61	F	G	G::100.00(60)
S1	62	F	V	V::100.00(53)
S1	63	F	G	G::100.00(53)
S1	64	F	A	A::100.00(53)
S1	66	F	G	G::100.00(56)
S1	67	F	P	P::100.00(56)
S1	68	F	G	G::100.00(48)
S1	70	F	T	T::100.00(48)
S1	71	F	P	P::100.00(48)
S1	72	F	P	P::100.00(47)
S1	73	F	H	H::100.00(54)
S1	74	F	G	G::100.00(54)
S1	75	F	G	G::100.00(54)
S1	76	F	V	V::100.00(54)
S1	77	F	L	L::100.00(47)
S1	78	F	G	G::100.00(47)
S1	79	F	W	W::100.00(44)
S1	80	F	S	S::100.00(44)
S1	81	F	P	P::100.00(44)
S1	82	F	Q	Q::100.00(52)
S1	83	F	A	A::100.00(52)
S1	84	F	Q	Q::100.00(52)
S1	85	F	G	G::100.00(54)
S1	86	F	L	L::100.00(50)
S1	87	F	L	L::100.00(56)
S1	88	F	A	A::100.00(56)
S1	89	F	T	T::100.00(65)
S1	90	F	V	V::100.00(65)
S1	91	F	P	P::100.00(65)
S1	92	F	A	A::100.00(65)
S1	93	F	V	V::100.00(65)
S1	94	F	P	P::100.00(55)
S1	95	F	P	P::100.00(56)
S1	96	F	P	P::100.00(61)
S1	97	F	A	A::100.00(61)
S1	98	F	S	S::100.00(61)
S1	99	F	T	T::100.00(61)
S1	100	F	N	N::100.00(61)
S1	101	F	R	R::100.00(61)
S1	102	F	Q	Q::100.00(61)
S1	103	F	S	S::100.00(61)
S1	104	F	G	G::98.36(60)
S1	105	F	R	R::100.00(61)
S1	106	F	Q	Q::100.00(58)
S1	107	F	P	P::100.00(57)
S1	108	F	T	T::100.00(44)
S1	109	F	P	P::100.00(44)
S1	110	F	I	I::100.00(41)

Meta data	
Assembly file:	HBV-RYD-15.sam
Annotation file:	/home3/vatt01s/Work/Project-150-HBV/Data/P150-1/Annotation/HBV.anno
Reference file:	KX357647.fa.
User name	ales01a
Hostname	Alpha
Location	/home2/ales01a/HBV/P150-5/HBV-RYD-15
Date/Time	Tue 19 Mar 11:11:32 GMT 2019