Circulation of Human Adenovirus-41 with diverse genome types and recombination in acute gastroenteritis among children in Shanghai

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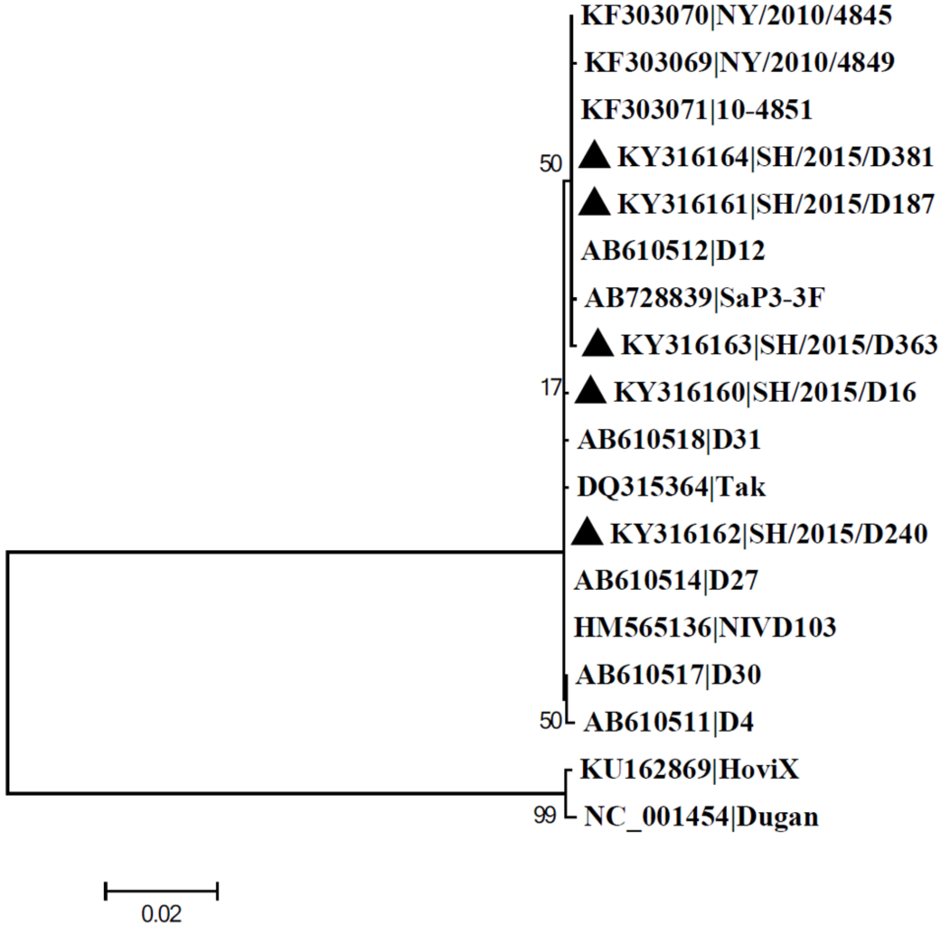
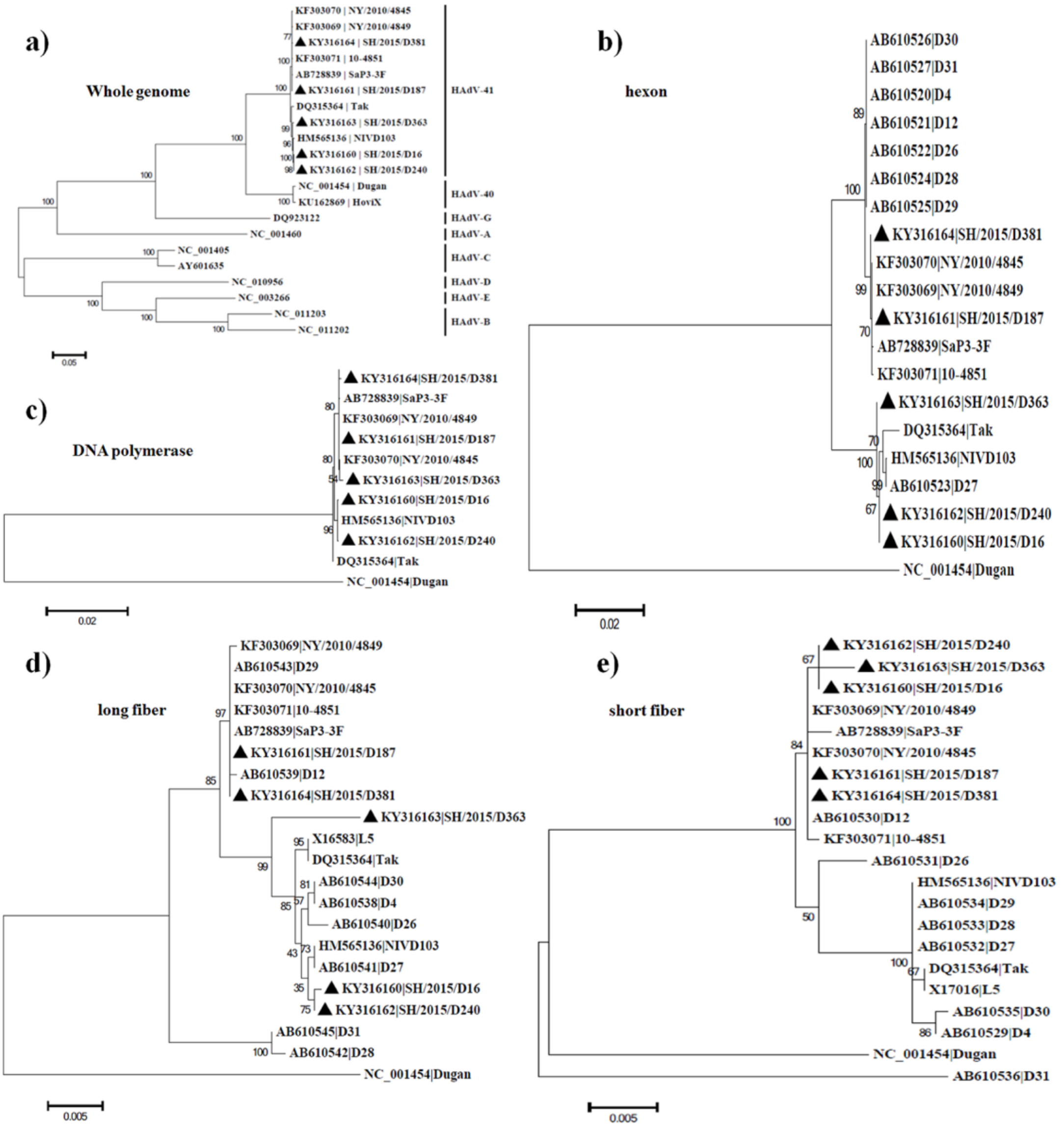
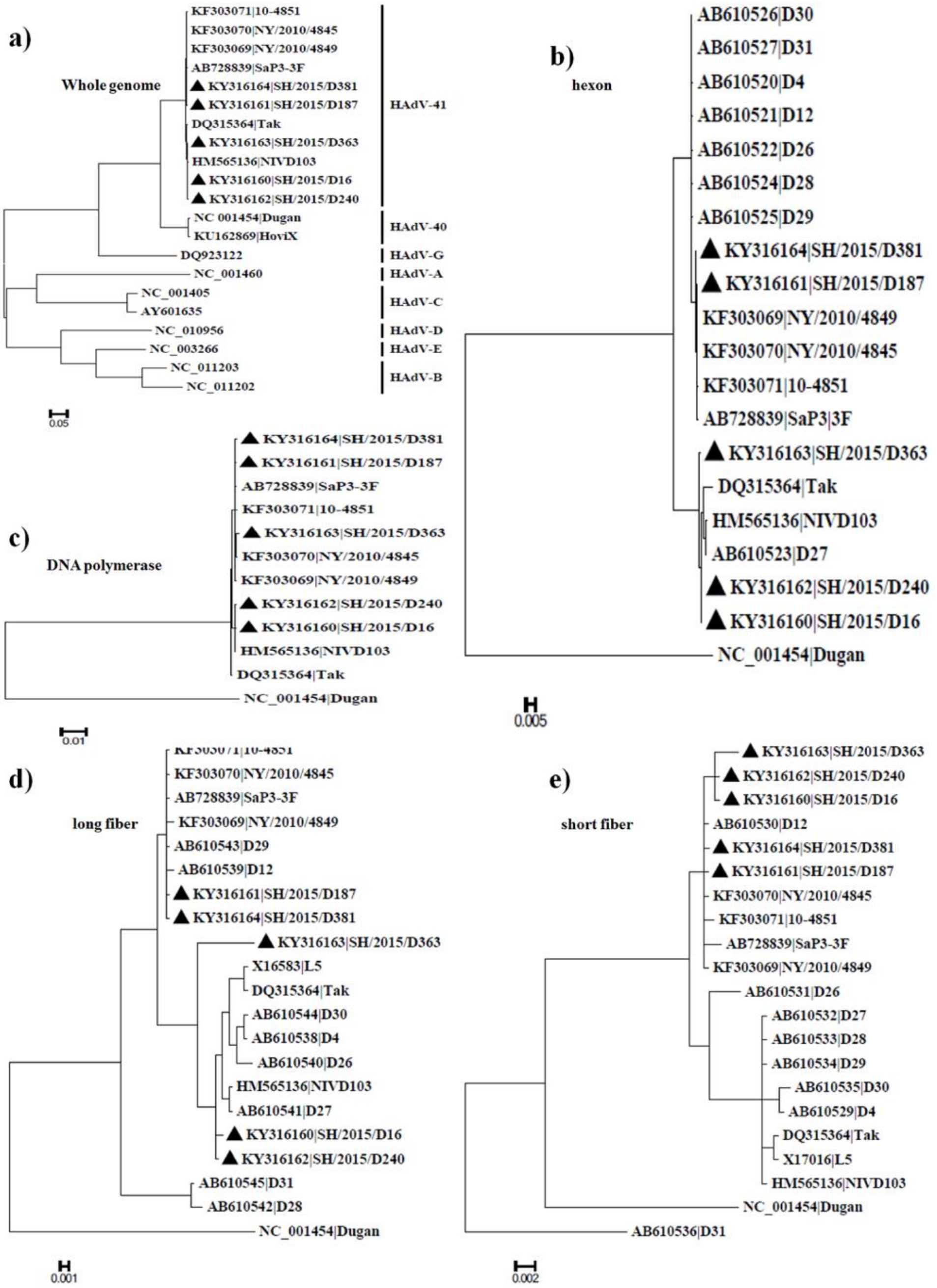
Supplementary Figure S1. The neighbor-Joining tree based on the penton gene



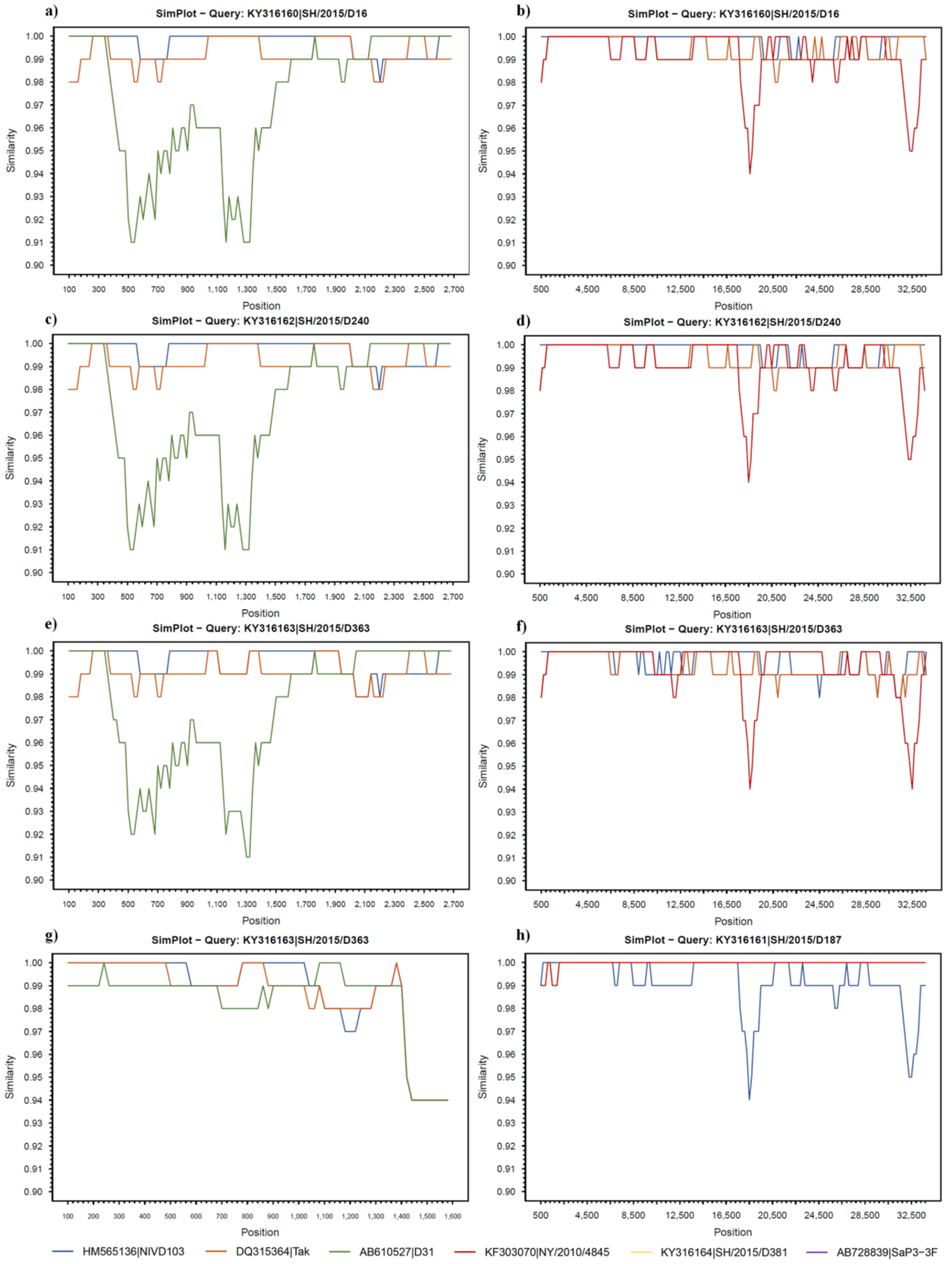
Supplementary Figure S2. The Maximum-Likelihood tree based on the whole genome (a), hexon (b), DNA po1lymerase (c), long fiber (d) and short fiber (e). The ML trees were inferred based on the General Time Reversible model with 1000 bootstrap values using MEGA6.



Supplementary Figure S3. The Bayesian-inferred tree based on the whole genome (a), hexon (b), DNA polymerase (c), long fiber (d) and short fiber (e). The Bayesian trees were inferred using GTR substitution model with gamma-distributed rate variation for 80,000 iterations using MrBayes.



Supplementary Figure S4. Similarity plots of hexon, long fiber and whole genome sequences of the recombinant isolates. (a) hexon of SH/2015/D16; (b) genome of SH/2015/D16; (c) hexon of SH/2015/D240; (d) genome of SH/2015/D240; (e) hexon of SH/2015/D363; (f) genome of SH/2015/D363; (g) long fiber of SH/2015/D363; and (h) genome of SH/2015/D187.



Supplementary Table S1. General features of sequenced reads of the samples

Sample	**Acc. No.**	**No. of raw reads**	**No. of viral reads**	**Expected coverage**
SH/2015/D16	KY36160	61471	31865	178
SH/2015/D18	KY36161	42861	21551	137
SH/2015/D240	KY36162	59118	22604	143
SH/2015/D363	KY36163	63040	33114	210
SH/2015/D381	KY36164	68165	36755	300

Supplementary Table S2 comparative genomic analysis of the five strains with the reference genome NIVD103

Location	Region	Gene	Nucleotide Change					
			NIVD103	**SH/2015/D16**	**SH/2015/D**	**SH/2015/D240**	**SH/2015/D3**	**SH/2015/D3**
62	Non-coding	-	C	T	C	T	T	C
69	Non-coding	-	T	A	T	A	A	T
77	Non-coding	-	A	T	A	T	T	A
86	Non-coding	-	T	G	T	G	G	T
115	Non-coding	-	T	C	T	C	C	T
125	Non-coding	-	T	C	T	C	C	T
172	Non-coding	-	A	A	A	A	A	-
187	Non-coding	-	G	G	G	G	G	-
243	Non-coding	-	C	T	T	T	T	C
284	Non-coding	-	G	A	A	A	A	G
324	Non-coding	-	G	A	G	A	A	G
337	Non-coding	-	G	A	G	A	A	G
361	Non-coding	-	G	G	G	G	G	A
453	Non-coding	-	C	G	G	G	G	C
481	Non-coding	-	C	T	T	T	T	C
502	CDS	E1A	G	A	A	A	A	G
517	CDS	E1A	G	T	T	T	T	G
561	CDS	E1A	C	C	C	C	C	T
571	CDS	E1A	T	C	C	C	C	T
598	CDS	E1A	G	A	A	A	A	G
635	CDS	E1A	G	C	C	C	C	G
638	CDS	E1A	T	T	C	T	T	T
818	CDS	E1A	G	A	G	A	A	G
1079	Non-coding	-	G	-	G	-	-	G
1352	Non-coding	-	C	C	C	C	G	G
1554	CDS	E1B 19K	T	C	C	C	C	T
1608	CDS	E1B 19K	T	T	A	T	T	T
1761	CDS	E1B 19K	A	G	G	G	G	G
1788	CDS	E1B 19K	C	C	T	C	C	C
1894	CDS	E1B 19K	G	G	A	G	G	G
1895	CDS	E1B 19K	A	A	G	A	A	A
1900	CDS	E1B 19K	-	-	-	G	-	-
1900	CDS	E1B 19K	-	-	-	A	-	-

1900	CDS	E1B 19K	-	-	-	G	-	-
2058	CDS	E1B 55K	C	C	C	G	C	C
3487	CDS	IX	C	T	C	C	C	C
3816	CDS	IVa2	C	T	C	T	C	C
3843	CDS	IVa2	G	G	G	G	A	A
4620	CDS	IVa2	G	G	T	G	G	G
5128	CDS	E2B DNA pol	G	G	G	G	G	T
6314	CDS	E2B DNA pol	G	G	A	G	A	A
6441	CDS	E2B DNA pol	C	T	T	T	T	T
6658	CDS	E2B DNA pol	C	C	C	C	T	C
6740	CDS	E2B DNA pol	A	A	G	A	G	G
6872	CDS	E2B DNA pol	G	G	G	G	G	A
6914	CDS	E2B DNA pol	C	T	C	T	T	C
6959	CDS	E2B DNA pol	C	C	T	C	T	T
7316	CDS	E2B DNA pol	C	T	C	T	C	C
7319	CDS	E2B DNA pol	C	C	T	C	T	T
7369	CDS	E2B DNA pol	C	C	C	C	T	C
7388	CDS	E2B DNA pol	G	G	G	A	G	G
7417	CDS	E2B DNA pol	T	G	T	T	T	T

8195	CDS	E2B DNA pol	A	G	A	G	G	A
8797	CDS	E2B preterminal protein	G	A	G	A	G	G
8904	CDS	E2B preterminal protein	G	A	G	A	A	G
8938	CDS	E2B preterminal protein	C	T	C	T	T	C
9016	CDS	E2B preterminal protein	G	A	G	A	G	G
9125	CDS	E2B preterminal protein	T	G	T	G	G	T
9325	CDS	E2B preterminal protein	A	G	G	G	G	G
9367	CDS	E2B preterminal protein	A	T	A	T	A	A
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10639	CDS	52-55K	C	C	C	C	T	C
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10827	CDS	52-55K	A	G	A	G	G	A
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10972	CDS	52-55K	C	T	C	T	T	C
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11744	CDS	IIIa	C	T	C	T	T	C
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11804	CDS	IIIa	G	G	G	G	A	G
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11930	CDS	IIIa	C	T	C	T	T	C
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11996	CDS	IIIa	C	T	C	T	T	C
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12144	CDS	IIIa	C	T	C	T	T	C
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13171	Non-coding	-	A	-	A	-	A	A
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13699	CDS	penton base	A	A	G	A	G	G
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14798	CDS	pVII	C	T	T	T	T	T
14926	CDS	pVII	G	C	C	C	C	C
15157	CDS	pVII	G	A	G	G	G	G
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15269	CDS	pVII	A	G	G	G	G	G
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19508	CDS	hexon	A	A	C	A	A	C
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19706	CDS	hexon	T	C	C	C	C	C
19835	CDS	hexon	T	C	C	C	C	C
19874	CDS	hexon	C	T	C	T	T	C
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20441	CDS	protease	T	C	C	C	C	C
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20680	CDS	protease	C	C	T	C	C	T
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20734	CDS	protease	G	A	A	A	A	A
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20918	CDS	protease	C	T	T	T	T	T

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21359	CDS	E2A DBP	C	T	T	T	T	T
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21471	CDS	E2A DBP	C	T	T	T	T	T
21718	CDS	E2A DBP	G	A	G	A	A	G
21880	CDS	E2A DBP	G	A	G	A	A	G
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22166	CDS	E2A DBP	C	T	C	T	C	C
22195	CDS	E2A DBP	T	C	T	C	T	T
22350	CDS	E2A DBP	C	C	T	C	T	T
22378	CDS	E2A DBP	-	-	C	-	-	-
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23253	CDS	100K	T	A	T	T	T	T
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23991	CDS	100K	T	C	T	C	T	T
23997	CDS	100K	C	T	C	T	C	C
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24148	CDS	100K	T	T	C	T	C	C
24173	CDS	100K	G	G	A	G	A	A
24186	CDS	100K	G	G	A	G	A	A
24218	CDS	100K	G	G	A	G	A	A
24294	CDS	100K	G	G	G	A	G	G
24360	CDS	100K	A	A	G	A	G	G
24363	CDS	100K	C	C	T	C	T	T

24745	CDS	100K	C	T	T	T	T	T
24751	CDS	100K	A	G	G	G	G	G
24812	CDS	100K	C	T	C	T	T	C
24898	Non-coding	-	C	C	-	-	G	-
24899	Non-coding	-	A	A	-	-	C	-
24900	Non-coding	-	C	C	-	-	C	-
24911	Non-coding	-	-	-	-	-	G	-
24947	Non-coding	-	-	-	-	-	T	-
24949	Non-coding	-	T	C	C	C	C	C
25133	Non-coding	-	T	T	C	T	T	C
25218	Non-coding	-	C	T	T	T	T	T
25289	Non-coding	-	C	T	C	T	T	C
25339	Non-coding	-	G	G	A	G	G	A
25350	Non-coding	-	C	C	T	C	C	T
25379	Non-coding	-	-	T	-	-	-	-
25381	Non-coding	-	G	G	G	A	G	G
25391	Non-coding	-	G	A	A	A	A	A
25584	CDS	pVIII	G	A	G	A	A	G
25626	CDS	pVIII	C	T	C	T	C	C
25631	CDS	pVIII	T	C	C	C	C	C
25701	CDS	pVIII	A	A	G	A	G	G
25800	CDS	pVIII	T	C	T	C	T	T
25849	CDS	pVIII	A	A	G	A	G	G
25854	CDS	pVIII	T	T	C	T	C	C
26155	Non-coding	-	G	G	T	G	G	T
26195	Non-coding	-	C	C	T	C	C	T
26201	Non-coding	-	G	A	G	A	A	G
26203	Non-coding	-	T	T	C	T	T	C
26269	CDS	E3 19.4K	G	G	A	G	G	A
26283	CDS	E3 19.4K	A	A	G	A	A	G
26294	CDS	E3 19.4K	C	C	T	C	C	T
26306	CDS	E3 19.4K	A	A	G	A	A	G
26317	CDS	E3 19.4K	C	C	A	C	C	A
26528	CDS	E3 19.4K	A	A	A	A	G	A
26649	CDS	E3 19.4K	A	G	A	G	A	A
26830	CDS	E3 31.6K	T	C	C	C	C	C
26953	CDS	E3 31.6K	T	C	T	C	C	T

27350	CDS	E3 31.6K	G	G	A	G	G	A
27435	CDS	E3 31.6K	A	G	A	G	G	A
27450	CDS	E3 31.6K	T	T	T	T	C	T
27451	CDS	E3 31.6K	C	C	C	C	T	C
27533	CDS	E3 31.6K	G	A	G	A	A	G
27751	CDS	E3 10.1K	T	T	T	C	T	T
27829	CDS	E3 10.1K	G	A	G	A	A	G
27876	CDS	E3 14.5K	T	C	T	C	C	T
27887	CDS	E3 14.5K	T	T	T	C	T	T
28134	CDS	E3 14.5K	G	G	G	A	G	G
28225	CDS	E3 14.7K	C	T	C	T	C	C
29081	CDS	short fiber protein	C	C	C	C	A	C
29092	CDS	short fiber protein	A	T	A	T	T	A
29128	CDS	short fiber protein	T	C	C	C	C	C
29150	CDS	short fiber protein	T	G	G	G	G	G
29153	CDS	short fiber protein	A	G	G	G	G	G
29155	CDS	short fiber protein	A	G	G	G	G	G
29179	CDS	short fiber protein	T	C	C	C	C	C
29276	CDS	short fiber protein	A	G	G	G	G	G

29284	CDS	short fiber protein	G	A	A	A	A	A
29591	CDS	short fiber protein	T	C	C	C	C	C
29669	CDS	short fiber protein	A	G	G	G	G	G
29738	CDS	short fiber protein	C	G	G	G	G	G
29743	CDS	short fiber protein	G	A	A	A	A	A
29773	CDS	short fiber protein	C	C	C	C	A	C
29774	CDS	short fiber protein	A	A	A	A	C	A
29866	CDS	short fiber protein	T	C	C	C	C	C
30062	CDS	long fiber protein	A	A	T	A	A	T
30287	CDS	long fiber protein	A	A	T	A	A	T
30318	CDS	long fiber protein	T	T	C	T	T	C
30488	CDS	long fiber protein	T	T	C	T	T	C
30535	CDS	long fiber protein	G	A	A	A	A	A
30608	CDS	long fiber protein	G	A	A	A	A	A
30656	CDS	long fiber protein	T	T	C	T	T	C

30687	CDS	long fiber protein	G	G	T	G	G	T
30728	CDS	long fiber protein	C	C	T	C	C	T
30857	CDS	long fiber protein	T	T	C	T	T	C
30917	CDS	long fiber protein	C	T	C	T	T	C
30932	CDS	long fiber protein	A	G	G	G	G	G
31073	CDS	long fiber protein	C	C	T	C	T	T
31118	CDS	long fiber protein	C	T	C	T	C	C
31121	CDS	long fiber protein	A	A	G	A	G	G
31124	CDS	long fiber protein	A	A	T	A	T	T
31207	CDS	long fiber protein	T	T	T	T	G	T
31262	CDS	long fiber protein	C	G	C	C	C	C
31286	CDS	long fiber protein	T	T	C	T	T	C
31439	CDS	long fiber protein	A	A	A	A	G	A
31441	CDS	long fiber protein	G	G	G	G	T	G
31443	CDS	long fiber protein	T	T	T	T	C	T

31444	CDS	long fiber protein	C	C	C	C	A	C
31451	CDS	long fiber protein	T	T	T	T	C	T
31452	CDS	long fiber protein	C	C	C	C	A	C
31453	CDS	long fiber protein	A	A	A	A	G	A
31454	CDS	long fiber protein	G	G	G	G	A	G
31456	CDS	long fiber protein	A	A	A	A	T	A
31462	CDS	long fiber protein	C	C	C	C	T	C
31463	CDS	long fiber protein	T	T	T	T	C	T
31700	Non-coding	-	C	C	C	C	A	C
31782	Non-coding	-	T	C	C	C	C	C
31893	Non-coding	-	T	T	C	T	T	C
31927	CDS	E4 hypothetical protein 6	C	C	T	C	C	T
31934	CDS	E4 hypothetical protein 6	T	T	C	T	T	C
31969	CDS	E4 hypothetical protein 6	C	C	T	C	C	T
31975	CDS	E4 hypothetical protein 6	C	C	T	C	C	T

31986	CDS	E4 hypothetical protein 6	A	A	G	A	A	G
31991	CDS	E4 hypothetical protein 6	T	T	C	T	T	C
32017	CDS	E4 hypothetical protein 6	C	C	T	C	C	T
32018	CDS	E4 hypothetical protein 6	C	C	T	C	C	T
32042	CDS	E4 hypothetical protein 6	T	T	C	T	T	C
32050	CDS	E4 hypothetical protein 6	C	C	A	C	C	A
32068	CDS	E4 hypothetical protein 6	T	T	G	T	T	G
32073	CDS	E4 hypothetical protein 6	G	G	A	G	G	A
32080	CDS	E4 hypothetical protein 6	T	T	C	T	T	C

32092	CDS	E4 hypothetical protein 6	G	G	A	G	G	A
32098	CDS	E4 hypothetical protein 6	A	A	T	A	A	T
32137	CDS	E4 hypothetical protein 6	A	A	G	A	A	G
32161	CDS	E4 hypothetical protein 6	A	A	G	A	A	G
32185	CDS	E4 hypothetical protein 6	C	T	C	T	T	C
32218	CDS	E4 hypothetical protein 6	G	G	A	G	G	A
32235	CDS	E4 hypothetical protein 6	G	G	A	G	G	A
32245	CDS	E4 hypothetical protein 6	T	T	C	T	T	C
32250	CDS	E4 hypothetical protein 6	A	A	T	A	A	T

32254	CDS	E4 hypothetical protein 6	C	C	T	C	C	T
32263	CDS	E4 hypothetical protein 6	A	G	G	G	G	G
32347	CDS	E4 hypothetical protein 6	T	T	C	T	T	C
32349	CDS	E4 hypothetical protein 6	A	A	G	A	A	G
32377	CDS	E4 hypothetical protein 6	A	A	G	A	A	G
32379	CDS	E4 hypothetical protein 6	G	G	T	G	G	T
32398	CDS	E4 hypothetical protein 6	T	T	C	T	T	C
32469	CDS	E4 hypothetical protein 6	T	T	T	T	C	T
32490	CDS	E4 hypothetical protein 6	T	T	G	T	T	G

32500	CDS	E4 hypothetical protein 6	G	G	A	G	G	A
32525	CDS	E4 hypothetical protein 6	T	T	C	T	T	C
32527	CDS	E4 hypothetical protein 6	G	G	A	G	G	A
32547	CDS	E4 hypothetical protein 6	C	C	T	C	C	T
32553	CDS	E4 hypothetical protein 6	A	A	G	A	A	G
32556	CDS	E4 hypothetical protein 6	C	C	T	C	C	T
32578	CDS	E4 hypothetical protein 6	C	C	T	C	C	T
32592	CDS	E4 hypothetical protein 6	C	C	T	C	C	T
32596	CDS	E4 hypothetical protein 6	A	A	G	A	A	G

32599	CDS	E4 hypothetical protein 6	T	T	A	T	T	A
32615	CDS	E4 hypothetical protein 6	C	C	G	C	C	G
32626	CDS	E4 hypothetical protein 6	A	A	G	A	A	G
32675	CDS	E4 hypothetical protein 6	T	T	C	T	T	C
32686	CDS	E4 hypothetical protein 6	A	A	G	A	A	G
32692	CDS	E4 hypothetical protein 6	A	A	G	A	A	G
32723	CDS	E4 hypothetical protein 6	T	T	C	T	T	C
32730	CDS	E4 hypothetical protein 6	C	C	T	C	C	T
32750	CDS	E4 hypothetical protein 6	C	C	T	C	C	T

32752	CDS	E4 hypothetical protein 6	G	A	G	A	A	G
32783	CDS	E4 hypothetical protein 4	C	C	T	C	C	T
32791	CDS	E4 hypothetical protein 4	T	T	C	T	T	C
32810	CDS	E4 hypothetical protein 4	T	T	C	T	G	C
32856	CDS	E4 hypothetical protein 4	T	C	C	C	C	C
32867	CDS	E4 hypothetical protein 4	T	T	G	T	T	G
32892	CDS	E4 hypothetical protein 4	A	A	G	A	A	G
32897	CDS	E4 hypothetical protein 4	T	T	C	T	T	C
32953	CDS	E4 hypothetical protein 4	T	T	C	T	T	C

32957	CDS	E4 hypothetical protein 4	T	T	C	T	T	C
33017	CDS	E4 hypothetical protein 4	G	G	A	G	G	A
33059	CDS	E4 hypothetical protein 4	T	T	C	T	T	C
33172	CDS	E4 hypothetical protein 3	A	A	G	A	A	G
33216	CDS	E4 hypothetical protein 3	A	A	G	A	A	G
33361	CDS	E4 hypothetical protein 3	A	G	G	G	G	G
33588	CDS	E4 hypothetical protein 2	T	C	C	C	C	C
33636	CDS	E4 hypothetical protein 2	G	G	A	G	G	A
33803	CDS	E4 hypothetical protein 2	A	A	A	C	A	A

33804	CDS	E4 hypothetical protein 2	T	C	C	A	C	C
33842	Non-coding	-	G	C	G	C	G	G
33931	Non-coding	-	G	G	A	G	A	A
33934	Non-coding	-	A	A	G	A	G	G
34007	Non-coding	-	G	-	G	-	-	G
34008	Non-coding	-	C	-	C	-	-	C
34009	Non-coding	-	A	-	A	-	-	A
34010	Non-coding	-	A	-	A	-	-	A
34011	Non-coding	-	A	-	A	-	-	A
34012	Non-coding	-	A	-	A	-	-	A
34013	Non-coding	-	A	-	A	-	-	A
34014	Non-coding	-	A	-	A	-	-	A
34015	Non-coding	-	C	-	C	-	-	C
34016	Non-coding	-	A	-	A	-	-	A
34017	Non-coding	-	C	-	C	-	-	C
34018	Non-coding	-	C	-	C	-	-	C
34019	Non-coding	-	G	-	G	-	-	G
34020	Non-coding	-	C	-	C	-	-	C
34032	Non-coding	-	T	T	A	T	G	G
34064	Non-coding	-	A	G	A	G	A	A
34074	Non-coding	-	A	G	A	G	A	A
34103	Non-coding	-	A	C	A	C	A	A
34112	Non-coding	-	T	A	T	A	T	T
34120	Non-coding	-	A	T	A	T	A	A
34127	Non-coding	-	G	A	G	A	G	G

″-″ means not applicable