

**Supplementary Table 4: Consensus single nucleotide differences between HSV-1 reference (Strain 17) and all 9 sequenced samples from patient and brother.**

CDS	CDS Nucleotide Position	Strain 17 Allele	Allele in HSV-1 from patient/brother	Variant Type	Strain 17 Amino Acid	Amino Acid in HSV-1 from patient/brother	G -> A	C -> T	APOBEC3 Dinucleotide*
UL5	693	C	T	S				Yes	CC
UL10	614	C	A	NS	P	Q			
UL16	657	C	T	S				Yes	GC
UL17	1684	G	T	S					
UL17	249	C	T	S				Yes	CC
UL18	9	C	T	S				Yes	CC
UL19	895	C	T	NS	E	K		Yes	TC
UL21	39	C	T	S				Yes	AC
UL23	527	C	T	NS	R	Q		Yes	TC
UL28	1032	C	T	S				Yes	TC
UL28	66	C	T	S				Yes	GC
UL29	2894	C	T	NS	S	N		Yes	GC
UL29	310	C	G	NS	D	H			
UL30	2226	A	C	S					
UL30	3250	G	A	NS	E	K	Yes		TC
UL34	753	C	A	S					
UL36	7877	G	A	NS	P	L	Yes		CC
UL37	1938	G	A	S			Yes		TC
UL37	467	C	T	NS	G	D		Yes	GC
UL37	273	C	T	S				Yes	AC
UL43	695	A	C	NS	D	A			
UL45	261	T	C	S					
UL47	1521	C	A	S					
UL48	726	C	T	S				Yes	AC
UL49A	267	C	T	S				Yes	GC
UL52	1468	G	T	NS	G	C			
UL52	1471	G	C	NS	G	R			
UL52	1474	A	C	NS	T	P			
UL54	96	C	T	S				Yes	GC
US3	227	A	C	NS	Q	P			
US3	1312	C	A	S					
US8	1125	C	T	S				Yes	TC
US10	736	C	T	NS	V	I		Yes	AC

\***APOBEC3 Dinucleotide:** APOBEC3 enzymes act preferentially on cytidines preceded by a T and to a lesser extent C. For variants that represent a C -> T change, this column gives the dinucleotide context for that C -> T change. For G -> A variants, this column gives the dinucleotide context for the C -> T change on the complement strand.