

Supplementary Table 1

		09N	09S	10N	10S	11N	11S	12N	12S	13N	13S	14N	14S	15N	15S
PB2	V344M	0	0.0067	0.0267	0.23	0.6433	0.59	0.9267	0.9167	0.98	1	0.9467	1	1	0.9767
	I354L	0	0	0.02	0.23	0.64	0.59	0.9267	0.9167	0.9767	1	0.9633	1	1	1
	D195N	0	0	0.0033	0.01	0.1	0.23	0.17	0.05	0.96	1	0.9633	1	1	1
	R293K	0	0	0.0033	0	0.09	0.2133	0.15	0.0267	0.96	1	0.9567	1	1	1
	V731I	0	0	0.0033	0	0.06	0.23	0.16	0.05	0.93	1	0.9633	1	1	1
	M66I	0	0	0	0	0	0	0.04	0.05	0.86	1	0.9533	1	1	1
	R54K	0	0	0	0	0	0	0.04	0.05	0.84	1	0.9567	1	1	1
	R251K*	0	0	0	0	0	0	0	0	0.0367	0.6567	0.0233	0	0	0
	A184T	0	0	0	0	0	0	0	0	0	0	0.0233	0	0.7633	0.5333
PB1	I397M	0	0	0	0.1533	0.24	0.4667	0.6433	0.5833	0.83	0.9767	0.9633	1	0.9533	1
	I435T*	0	0	0	0.0867	0.22	0.4667	0.6133	0.51	0.0833	0	0	0	0	0
	I435T	0	0	0	0	0	0	0.02	0.0733	0.8467	1	0.9567	1	1	1
	G154D	0	0	0	0	0	0	0.0067	0.0733	0.84	1	0.9633	1	0.99	1
	K52R*	0	0	0	0	0	0	0	0	0.0133	0.6733	0.0167	0	0	0
	R211K	0	0	0	0	0	0	0	0	0	0	0	0	0.5533	0.4933
PA	L581M	0	0.8933	0.9933	1	1	1	0.9967	1	1	1	1	1	1	1
	N321K	0	0	0	0.23	0.6733	0.5833	0.8833	0.95	0.96	1	0.96	1	1	1
	A343T	0	0	0	0.1567	0.2033	0.47	0.6733	0.5533	0.8633	0.23	0.0067	0	0	0
	V100I	0	0	0	0	0	0.02	0.0433	0	0.0567	0.77	0.94	1	1	1
	I330V	0	0	0	0.0033	0.23	0.1	0.1833	0.3967	0.0967	0.77	0.9367	1	0.9267	1
	K361R	0	0	0	0	0	0	0	0	0.0433	0.77	0.9367	1	0.91	0.7933
	R362K	0	0	0	0	0	0	0	0	0.0433	0.77	0.9467	1	1	1
	P560H*	0	0	0	0	0	0	0	0	0.0233	0.6633	0.0233	0	0	0
	I387V*	0	0	0	0	0	0	0	0	0	0	0.2267	0.7867	0.04	0
	S522G*	0	0	0	0	0	0	0	0	0	0	0.2467	0.7867	0.04	0
HA1	S203T	0	0.7067	0.9667	0.9833	1	1	0.9967	0.9933	0.9833	1	1	0.99	1	1

	S185T	0	0	0.0067	0.22	0.62	0.69	0.9133	0.97	0.9633	0.98	1	0.99	1	0.9733
	S143G*	0	0	0.0033	0.03	0.1733	0.46	0.7167	0.62	0.12	0.0133	0	0	0	0
	A197T*	0	0	0.0033	0.1	0.2367	0.4733	0.71	0.6333	0.13	0.0133	0	0	0	0
	N260D*	0	0	0	0	0.01	0.0233	0.63	0.42	0.02	0	0	0	0	0
	S69T*	0	0	0	0	0	0	0.62	0.42	0.02	0	0	0	0	0
	D97N	0	0.0033	0.0067	0.0733	0.47	0.34	0.26	0.3467	0.8367	0.9633	1	0.99	0.9933	1
	V234I*	0	0	0	0	0	0	0	0.0167	0.6967	0.3867	0.01	0	0.02	0.0267
	K283E*	0	0.0033	0.0033	0	0	0	0	0.0167	0.6467	0.3833	0.01	0	0.0233	0.0267
	K163Q	0	0	0	0	0	0	0	0	0.08	0.5533	0.9833	0.99	0.9767	0.89
	K283E	0	0	0	0	0	0.0067	0.0067	0.0567	0.06	0.5467	0.9867	0.96	0.9767	0.9733
	A256T	0	0	0	0	0	0	0	0.02	0.0867	0.5433	0.99	0.9733	0.9767	0.9733
NP	I373T	0	0.9	1	0.9933	1	1	0.9933	0.96	0.97	1	0.7533	1	1	0.9867
	V100I	0	0.7967	0.9733	0.9733	0.9933	1	0.9933	1	0.96	1	0.9867	1	1	1
	S498N	0	0	0	0	0.0033	0.0833	0.06	0.11	0.8667	0.36	0.9533	1	1	1
	E454D*	0	0	0	0	0	0	0	0	0.0167	0.64	0.02	0	0	0
	N377S*	0	0	0	0	0	0	0	0	0.0167	0.6333	0.02	0	0	0
	A22T	0	0	0	0	0	0	0	0	0	0	0.2767	0.7667	0.1967	0.4333
	M105T	0	0	0	0	0	0	0	0	0	0	0.2767	0.7667	0.1967	0.4333
	V425I	0	0	0	0	0	0	0	0	0.0233	0	0.2533	0	0.8033	0.5667
	V444I	0	0	0	0	0	0	0	0	0	0	0.0033	0	0.8033	0.5667
NA	V106I	0.3787	0.82	0.9633	0.99	0.9767	0.9567	0.87	0.7767	0.1133	0.0467	0.0033	0	0	0
	N248D	0.3787	0.8067	0.98	0.9767	0.9833	0.95	0.8767	0.7633	0.0967	0.0367	0.0033	0	0	0
	N369K	0	0.0033	0.0033	0.2267	0.6633	0.8767	0.92	0.9633	0.9633	1	0.99	1	1	1
	V241I	0	0	0	0.22	0.6567	0.8333	0.8267	0.75	0.1067	0.0467	0	0	0	0
	N44S*	0	0	0	0.11	0.22	0.4567	0.61	0.1833	0.0333	0	0	0	0	0
	G41R*	0	0	0	0	0.0067	0.0267	0.5267	0.1767	0.02	0	0	0	0	0
	I106V	0	0	0	0	0.0033	0.0267	0.1067	0.1867	0.8633	0.9467	0.9967	1	1	1
	N44S	0	0	0	0	0.0033	0.0133	0.1167	0.1767	0.8433	0.9533	0.9933	0.9267	1	1
	V241I	0	0	0	0	0.0033	0.0233	0.1167	0.2033	0.8433	0.95	0.9967	1	1	1
	N248D	0	0	0	0	0.0033	0	0.0933	0.16	0.8433	0.95	0.9967	0.99	0.99	1
	N200S	0	0	0	0	0.0033	0.0233	0.1067	0.2033	0.8367	0.9167	0.98	0.8967	1	1

	I321V	0	0	0	0	0	0	0.0233	0.0533	0.1	0.59	0.9233	0.93	1	1
	I34V	0	0	0	0	0	0	0	0	0.0133	0.2767	0.9167	0.8567	0.96	0.91
	K432E	0	0	0	0	0	0	0	0	0.0167	0.2767	0.9067	0.93	0.97	0.9567
	L40I	0	0	0	0	0	0	0	0	0.0067	0.0133	0.2333	0.4433	0.97	0.9567
	N386K	0	0	0	0	0	0	0	0	0	0	0.2033	0.4433	0.97	0.9567
	I117M	0	0	0	0	0	0	0	0	0	0	0.0067	0.0167	0.5733	0.47
M1	V80I	0	0.0267	0.03	0.1733	0.6433	0.4867	0.8033	0.6533	0.05	0	0	0	0	0
	K230R	0	0	0	0.0367	0.0033	0.01	0.0567	0.0767	0.9	1	0.9967	1	1	1
	V80I	0	0	0	0	0	0	0.01	0.0767	0.7133	0.97	0.7633	0.2433	0.1533	0.24
	M192V	0	0	0	0	0	0	0.01	0.0767	0.7133	0.98	0.7633	0.2433	0.1667	0.24
	V80I	0	0	0	0	0	0.01	0.0467	0	0.13	0.02	0.2333	0.7567	0.8333	0.76
	M192V	0	0	0	0	0	0	0	0	0.0033	0	0.2	0.7567	0.8333	0.76
M2	S13N*	0	0.0033	0.0033	0.0033	0.0633	0.0167	0.5767	0.4933	0.0267	0	0	0	0	0
	V21G*	0	0	0	0	0.01	0.1233	0.0733	0.0467	0.7	0.32	0.02	0	0.1033	0
	D21G	0	0	0	0	0	0	0	0	0.12	0.65	0.9067	0.78	0.1767	0.3433
	G21V	0	0	0	0	0	0	0	0	0	0	0.0633	0.22	0.7033	0.6467
NS1	I123V	0	0.6233	0.91	0.9133	0.98	1	0.9933	0.9667	0.9967	1	1	1	1	1
	L90I	0	0	0	0.1767	0.25	0.4233	0.6567	0.66	0.8867	1	1	1	1	1
	N205S	0	0	0	0	0.0033	0.0167	0.0633	0.3067	0.6133	0.9733	0.9733	1	1	1
	T80A*	0	0	0	0	0	0	0	0	0.0167	0.6567	0.0067	0	0	0
	E55K	0	0	0	0	0	0	0	0	0.02	0.0933	0.61	0.78	1	1
	K131E	0	0	0	0	0	0	0	0	0.0233	0.0933	0.61	0.78	1	1
NS2	T48A	0	0	0	0	0.0167	0.1233	0.1367	0.4033	0.8267	0.98	0.9767	1	1	1
	N29S	0	0	0	0	0	0	0	0	0.0167	0.6867	0.3667	0.76	0.93	0.9533