

**Supplementary Table 3**

	<b>H3N2</b>		<b>pH1N1</b>	
	<b>dN/dS</b>	<b>HyPhy SCLAC</b>	<b>dN/dS</b>	<b>HyPhy SCLAC</b>
<b>PB2</b>	0.223	0.283	0.260	0.480
<b>PB1</b>	0.096	0.204	0.119	0.220
<b>PA</b>	0.142	0.212	0,277	0.455
<b>HA1</b>	0.298	0.522	0,344	0.506
<b>HA2</b>	0.148	0.206	0.127	0.231
<b>NP</b>	0,089	0.127	0,162	0.269
<b>NA</b>	0,778	0.688	0,520	0.950
<b>M1</b>	0,100	0.208	0,232	0.350
<b>M2</b>	0.589	1.812	0,472	1.242
<b>NS1</b>	0.429	0.589	0,488	0.977
<b>NS2</b>	0.327	0.774	0,420	0.611

**Table S3: Comparison of mean  $dN/dS$ .**

As a sanity check, we compared our results with the mean  $dN/dS$  value from the Suzuki-Gojobori counting approach implemented in HyPhy SLAC for all proteins.