

1 **Supplementary Table S1 Alignment of the internal gene nucleotide sequences of influenza strains.**

Gene	Dk/k1203(H5N8)	Dk/1111(H5N2)	Dk/1-15(H4N2)	En/28(H11N9)	BDk/Gochang1(H5N8)	BTI/Donglim3(H5N8)
PB2	98.9^a	95.7	96	87.6	87	100
PB1	94.7	98.5	98.6	92.3	93.8	99.9
PA	95.6	98.1	98.3	93.3	96	99.9
NP	98.6	95.7	95.7	92.2	97.7	99.9
M	97.6	99.1	99.1	92	96.7	99.8
NS	89.9	98.8	98.7	94.9	93.9	99.9

2 Abbreviations: Dk/k1203(H5N8), A/duck/Jiangsu/k1203/2010(H5N8); Dk/1111(H5N2), A/duck/Eastern

3 China/1111/2011(H5N2); Dk/1-15(H4N2), A/duck/Jiangsu/1-15/2011(H4N2); En/28(H11N9),

4 A/environment/Jiangxi/28/2009(H11N9); BDk/Gochang1(H5N8), A/broiler duck/Korea/Gochang1/2014(H5N8);

5 BTI/Donglim3(H5N8), A/Baikal teal/Korea/Donglim3/2014(H5N8).

6 ^aPercentage homologies based on coding sequences of MDk/W452(H5N8), A/mallard duck/Korea/W452/2014(H5N8).

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