

Electronic Supplementary Material

Accelerated Evolution of H7N9 Subtype Influenza Virus under Vaccination Pressure

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Table S1 The information of those reference sequences in phylogenetic trees.**Table S2** H7N9 strain isolates from 2017 to 2019

Name	Date	Host	Location	Isolate ID
A/chicken/Shenzhen/E65/2017	2017/1/7	chicken	Guangdong	EPI_ISL_718261
A/chicken/Jiangmen/E112/2017	2017/3/8	chicken	Guangdong	EPI_ISL_718316
A/chicken/Huizhou/E122/2017	2017/2/26	chicken	Guangdong	EPI_ISL_718317
A/chicken/Foshan/E128/2017	2017/2/28	chicken	Guangdong	EPI_ISL_720146
A/chicken/Zhongshan/E194/2017	2017/3/14	chicken	Guangdong	EPI_ISL_721652
A/chicken/Dongguan/E282/2017	2017/2/23	chicken	Guangdong	EPI_ISL_721668
A/duck/Foshan/E594/2017	2017/9/15	duck	Guangdong	EPI_ISL_728168
A/chicken/Qingyuan/E656/2017	2017/6/7	chicken	Guangdong	EPI_ISL_728171
A/chicken/Qingyuan/E664/2017	2017/6/30	chicken	Guangdong	EPI_ISL_728172
A/chicken//Yunnan/E743/2017	2017/8/23	chicken	Yunnan	EPI_ISL_728173
A/chicken/Shandong/F11/2017	2017/12/1	chicken	Shandong	EPI_ISL_728174
A/duck/Shenzhen/F450/2018	2018/4/11	duck	Guangdong	EPI_ISL_728175
A/chicken/Yunnan/F690/2018	2018/7/17	chicken	Yunnan	EPI_ISL_728176
A/chicken/Yunnan/F691/2018	2018/7/17	chicken	Yunnan	EPI_ISL_728177
A/chicken/Yunnan/F692/2018	2018/7/17	chicken	Yunnan	EPI_ISL_728213
A/chicken/Shandong/G285/2019	2019/2/15	chicken	Shandong	EPI_ISL_728214
A/chicken/Hebei/G323/2019	2019/4/11	chicken	Hebei	EPI_ISL_728215
A/duck/Guangdong/G375/2019	2019/5/6	duck	Guangdong	EPI_ISL_728216
A/chicken/Liaoning/G502/2019	2019/5/13	chicken	Liaoning	EPI_ISL_728217
A/chicken/Liaoning/G503/2019	2019/5/31	chicken	Liaoning	EPI_ISL_728218

Table S3 Potential glycosylation sites of HA protein of 20 H7N9 subtype influenza viruses

Strains	Sites					
	30	46	141	249	493	497
E65	NGT	NAT		NDT	NNT	
E112	NGT	NAT		NDT	NNT	
E122	NGT	NAT		NDT		NNT
E128	NGT	NAT		NDT	NNT	
E194	NGT	NAT		NDT	NNT	
E282	NGT	NAT		NDT		NNT
E594	NGT	NAT		NDT		NNT
E656		NAT		NDT		NNT
E664	NGT	NAT		NDT		NNT
E743	NGT	NAT		NDT		NNT
F11	NGT	NAT		NDT		NNT
F450	NGT	NAT		NDT		NNT
F690	NGT	NAT		NDT		NNT
F691	NGT	NAT		NDT		NNT
F692	NGT	NAT		NDT		NNT
G285	NGT	NAT	NGT	NDT		NNT
G323	NGT	NAT	NGT	NDT		NNT
G375	NGT	NAT	NGT	NDT		NNT
G502	NGT	NAT	NGT	NDT		NNT
G503	NGT	NAT	NGT	NDT		NNT

Table S4 Potential glycosylation sites of NA protein in the 20 H7N9 strains

Sites Strains	42	52	63	66	82	142	197	354
E65	NCS	NTS	NET	NIT	NLT	NGT	NAS	
E112	NCS	NTS	NET	NIT	NLT	NGT	NAS	
E122	NCS	NTS	NET	NIT	NLT	NGT	NAS	
E128	NCS	NTS	NET	NIT	NLT	NGT	NAS	
E194	NCS	NTS	NET	NIT	NLT	NGT	NAS	
E282	NCS	NTS	NET	NIT	NLT	NGT	NAS	
E594	NCS	NTS	NET	NIT	NLT	NET	NAS	
E656	NCS	NTS	NET		NLT	NGT	NAS	
E664	NCS	NPS	NET	NIT	NLT	NGT	NAS	
E743	NCS	NPS	NET	NIT	NLT	NGT	NAS	
F11	NCS	NTS	NET	NIT	NLT	NGT	NAS	
F450	NCS	NTS	NET	NIT	NLT	NGT	NAS	
F690	NCS	NTS	NET	NIT	NLT	NGT	NAS	
F691	NCS	NTS	NET	NIT	NLT	NGT	NAS	
F692	NCS	NTS		NIT	NLT	NGT	NAS	
G285	NCS	NTS	NET	NIT	NLT	NGT	NAS	NNT
G323	NCS	NIS	NET	NIT	NLT	NGT	NAS	NNT
G375	NCS	NIS	NET	NIT	NLT	NGT	NAS	NNT
G502	NCS	NTS	NET	NIT	NLT	NGT	NAS	
G503	NCS	NTS	NET	NIT	NLT	NGT	NAS	NNT