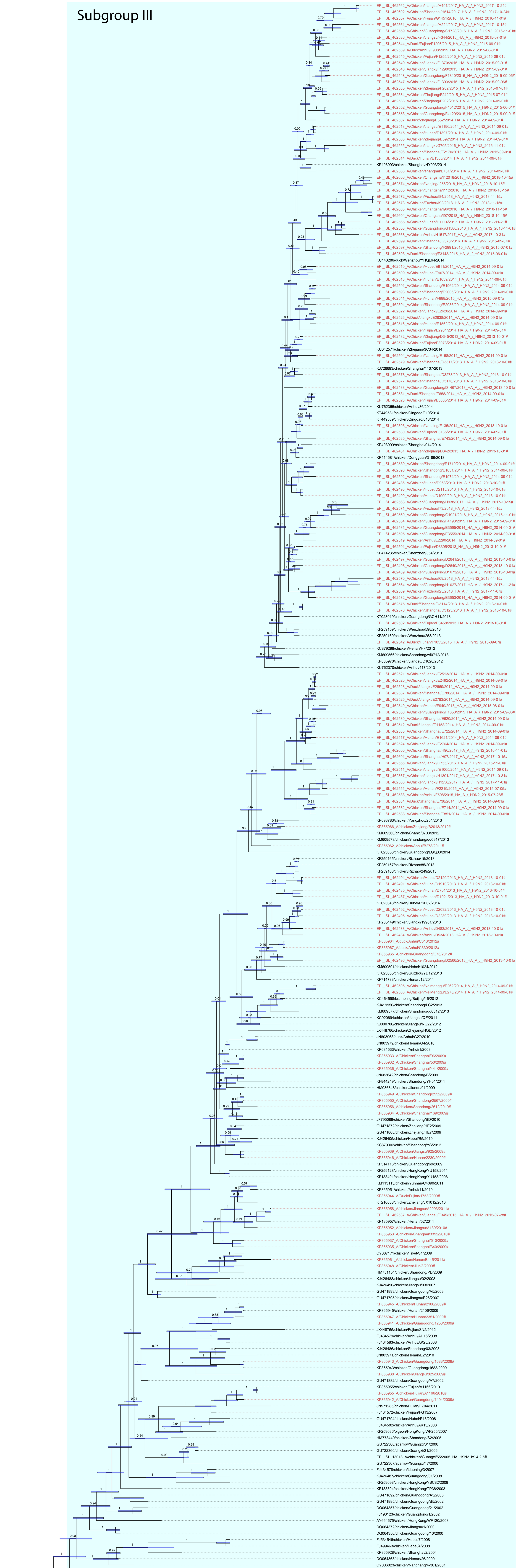
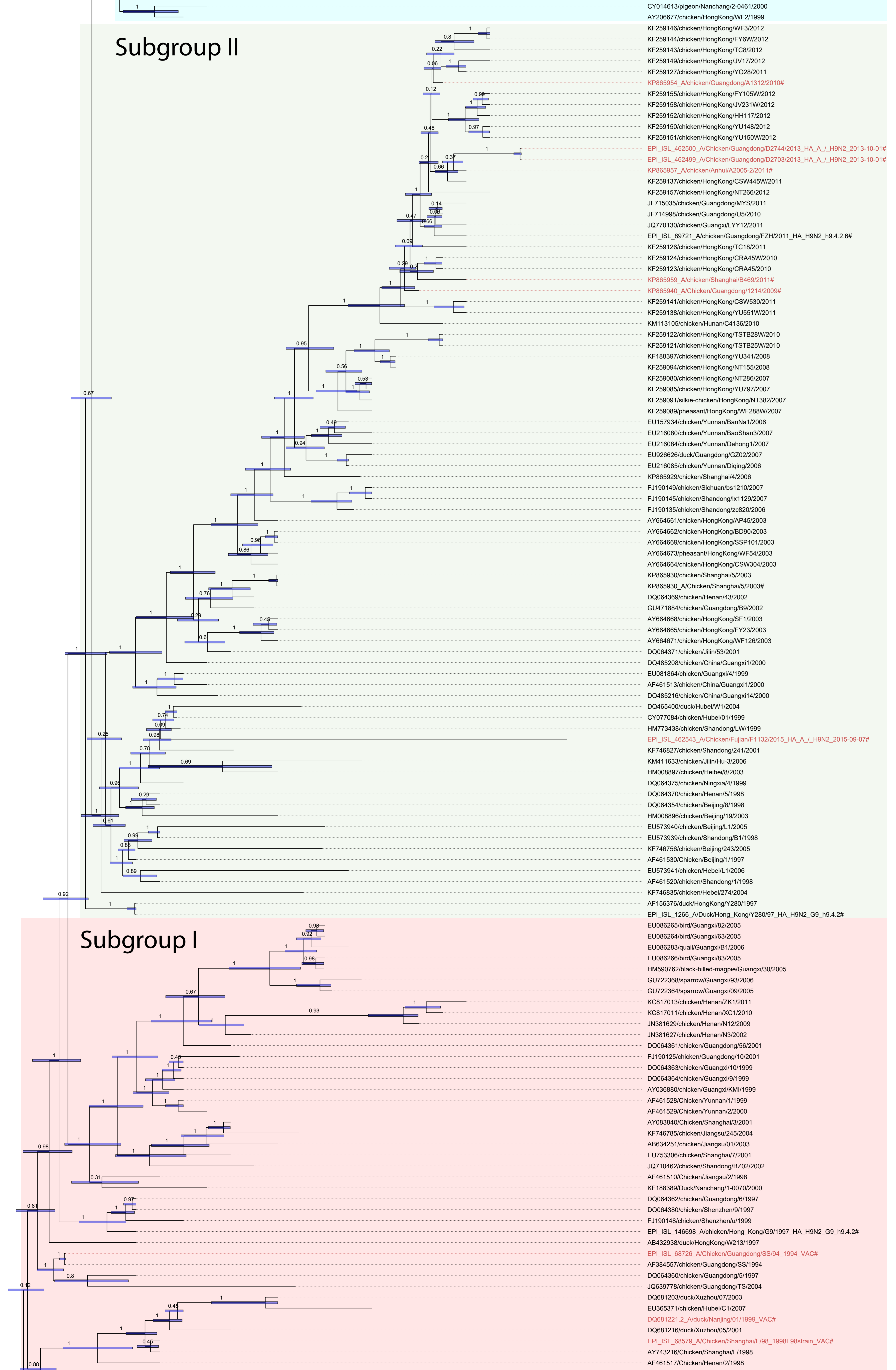


Subgroup III



Subgroup II



Subgroup I



Supplementary File1. Time-scale tree of HA gene of the G9 lineage of H9N2. The lab-isolated H9N2 strains from the 2013 to 2018 surveillance are marked with “EPI_ISL_”. The G9 lineage strains recovered from the data set of Yang et al 2019 (1) are given in black.

Reference

1. Yang J, Müller NF, Bouckaert R, Xu B, Drummond AJ. 2019. Bayesian phylodynamics of avian influenza A virus H9N2 in Asia with time-dependent predictors of migration. *PLoS computational biology* 15:e1007189.

Table S1. The submission of sequence date in GIASID and GeneBank.

Isolate_Name	Country	Province	Host	Collection_Date	Segment_Ids GISAID	Segment_Ids GeneBank
A/Chicken/Zhejiang/D342/2013	China	Zhejiang	Chicken	2013-10	EPI1742690	OK563213
A/Chicken/Zhejiang/D345/2013	China	Zhejiang	Chicken	2013-10	EPI1742698	OK563212
A/Chicken/Anhui/D483/2013	China	Anhui	Chicken	2013-10	EPI1742706	OK563214
A/Chicken/Anhui/D534/2013	China	Anhui	Chicken	2013-10	EPI1742714	OK563215
A/Chicken/Hunan/D701/2013	China	Hunan	Chicken	2013-10	EPI1742722	OK563216
A/Chicken/Hunan/D963/2013	China	Hunan	Chicken	2013-10	EPI1742730	OK563217
A/Chicken/Hunan/D1021/2013	China	Hunan	Chicken	2013-10	EPI1742738	OK563208
A/Chicken/Guangdong/D1467/2013	China	Guangdong	Chicken	2013-10	EPI1742746	OK563218
A/Chicken/Guangdong/D1673/2013	China	Guangdong	Chicken	2013-10	EPI1742754	OK563219
A/Chicken/Guangdong/D2566/2013	China	Guangdong	Chicken	2013-10	EPI1742810	OK563220
A/Chicken/Guangdong/D2641/2013	China	Guangdong	Chicken	2013-10	EPI1742818	OK563209
A/Chicken/Guangdong/D2649/2013	China	Guangdong	Chicken	2013-10	EPI1742826	OK563221
A/Chicken/Guangdong/D2703/2013	China	Guangdong	Chicken	2013-10	EPI1742834	OK563210
A/Chicken/Guangdong/D2744/2013	China	Guangdong	Chicken	2013-10	EPI1742842	OK563222
A/Duck/Shanghai/D3114/2013	China	Shanghai	Duck	2013-10	EPI1743402	OK563223
A/Chicken/Shanghai/D3123/2013	China	Shanghai	Chicken	2013-10	EPI1743410	OK563224
A/Chicken/Shanghai/D3176/2013	China	Shanghai	Chicken	2013-10	EPI1743418	OK563225
A/Chicken/Shanghai/D3273/2013	China	Shanghai	Chicken	2013-10	EPI1743426	OK563211
A/Chicken/Shanghai/D3317/2013	China	Shanghai	Chicken	2013-10	EPI1743434	OK563232
A/Chicken/Fujian/D3395/2013	China	Fujian	Chicken	2013-10	EPI1742850	OK563226
A/Chicken/Fujian/D3458/2013	China	Fujian	Chicken	2013-10	EPI1742858	OK563227
A/Chicken/NanJing/E135/2014	China	Jiangsu	Chicken	2014-9	EPI1742866	OK563173
A/Chicken/NanJing/E158/2014	China	Jiangsu	Chicken	2014-9	EPI1742874	OK563174
A/Duck/Zhejiang/E552/2014	China	Zhejiang	Duck	2014-9	EPI1742898	OK563169
A/Chicken/Zhejiang/E592/2014	China	Zhejiang	Chicken	2014-9	EPI1742906	OK563175
A/Chicken/Shanghai/E620/2014	China	Shanghai	Chicken	2014-9	EPI1743442	OK563176
A/Duck/Shanghai/E658/2014	China	Shanghai	Duck	2014-9	EPI1743450	OK563171
A/Chicken/Shanghai/E714/2014	China	Shanghai	Chicken	2014-9	EPI1743458	OK563177
A/Chicken/Shanghai/E722/2014	China	Shanghai	Chicken	2014-9	EPI1743466	OK563178
A/Duck/Shanghai/E738/2014	China	Shanghai	Duck	2014-9	EPI1743474	OK563179
A/Chicken/Shanghai/E743/2014	China	Shanghai	Chicken	2014-9	EPI1743482	OK563180
A/Chicken/shanghai/E751/2014	China	Shanghai	Chicken	2014-9	EPI1743490	OK563181
A/Chicken/Shanghai/E780/2014	China	Shanghai	Chicken	2014-9	EPI1743498	OK563182
A/Chicken/Shanghai/E851/2014	China	Shanghai	Chicken	2014-9	EPI1743506	OK563183
A/Chicken/Jiangsu/E1065/2014	China	Jiangsu	Chicken	2014-9	EPI1742930	OK563184
A/Duck/Jiangsu/E1158/2014	China	Jiangsu	Duck	2014-9	EPI1742938	OK563185
A/Chicken/Jiangsu/E1196/2014	China	Jiangsu	Chicken	2014-9	EPI1742946	OK563186
A/Duck/Hunan/E1385/2014	China	Hunan	Duck	2014-9	EPI1742954	OK563187
A/Chicken/Hunan/E1397/2014	China	Hunan	Chicken	2014-9	EPI1742962	OK563229
A/Chicken/Hunan/E1562/2014	China	Hunan	Chicken	2014-9	EPI1742970	OK563188
A/Chicken/Hunan/E1621/2014	China	Hunan	Chicken	2014-9	EPI1742978	OK563172
A/Chicken/Hunan/E1639/2014	China	Hunan	Chicken	2014-9	EPI1742986	OK563189

Continued Table S1.

Isolate_Name	Country	Province	Host	Collection_Date	Segment_Ids GISAID	Segment_Ids GeneBank
A/Chicken/Shandong/E1719/2014	China	Shandong	Chicken	2014-9	EPI1743514	OK563190
A/Chicken/Shandong/E1831/2014	China	Shandong	Chicken	2014-9	EPI1743522	OK563191
A/Chicken/Shandong/E1962/2014	China	Shandong	Chicken	2014-9	EPI1743530	OK563192
A/Chicken/Shandong/E1974/2014	China	Shandong	Chicken	2014-9	EPI1743538	OK563193
A/Chicken/Shandong/E2006/2014	China	Shandong	Chicken	2014-9	EPI1743546	OK563195
A/Chicken/Shandong/E2086/2014	China	Shandong	Chicken	2014-9	EPI1743554	OK563194
A/Chicken/Anhui/E2290/2014	China	Anhui	Chicken	2014-9	EPI1742994	OK563170
A/Chicken/Jiangxi/E2492/2014	China	Jiangxi	Chicken	2014-9	EPI1743002	OK563168
A/Chicken/Jiangxi/E2513/2014	China	Jiangxi	Chicken	2014-9	EPI1743010	OK563196
A/Chicken/Jiangxi/E2620/2014	China	Jiangxi	Chicken	2014-9	EPI1743018	OK563197
A/Duck/Jiangxi/E2669/2014	China	Jiangxi	Duck	2014-9	EPI1743026	OK563198
A/Chicken/Jiangxi/E2764/2014	China	Jiangxi	Chicken	2014-9	EPI1743034	OK563199
A/Duck/Jiangxi/E2783/2014	China	Jiangxi	Duck	2014-9	EPI1743042	OK563200
A/Duck/Jiangxi/E2838/2014	China	Jiangxi	Duck	2014-9	EPI1743050	OK563201
A/Chicken/Fujian/E2901/2014	China	Fujian	Chicken	2014-9	EPI1743058	OK563202
A/Chicken/Fujian/E3005/2014	China	Fujian	Chicken	2014-9	EPI1743066	OK563203
A/Chicken/Fujian/E3073/2014	China	Fujian	Chicken	2014-9	EPI1743074	OK563204
A/Chicken/Fujian/E3135/2014	China	Fujian	Chicken	2014-9	EPI1743082	OK563205
A/Chicken/Guangdong/E3555/2014	China	Guangdong	Chicken	2014-9	EPI1743562	OK563206
A/Chicken/Guangdong/E3595/2014	China	Guangdong	Chicken	2014-9	EPI1743090	OK563207
A/Chicken/Guangdong/E3653/2014	China	Guangdong	Chicken	2014-9	EPI1743098	OK563228
A/Chicken/Zhejiang/F202/2015	China	Zhejiang	Chicken	2015-7	EPI1743106	OK563234
A/Chicken/Zhejiang/F242/2015	China	Zhejiang	Chicken	2015-7	EPI1743114	OK563150
A/Chicken/Zhejiang/F282/2015	China	Zhejiang	Chicken	2015-7	EPI1743122	OK563231
A/Chicken/Jiangsu/F344/2015	China	Jiangsu	Chicken	2015-7-28	EPI1743130	OK563233
A/Chicken/Jiangsu/F345/2015	China	Jiangsu	Chicken	2015-7-28	EPI1743138	OK563151
A/Chicken/Anhui/F598/2015	China	Anhui	Chicken	2015-8	EPI1743146	OK563154
A/Duck/Anhui/F908/2015	China	Anhui	Duck	2015-8	EPI1743154	OK563155
A/Chicken/Hunan/F949/2015	China	Hunan	Chicken	2015-9-7	EPI1743162	OK563156
A/Chicken/Hunan/F998/2015	China	Hunan	Chicken	2015-9-7	EPI1743170	OK563157
A/Duck/Hunan/F1053/2015	China	Hunan	Duck	2015-9-7	EPI1743178	OK563235
A/Chicken/Fujian/F1132/2015	China	Fujian	Chicken	2015-9	EPI1743186	OK563158
A/Duck/Fujian/F1206/2015	China	Fujian	Duck	2015-9	EPI1743194	OK563159
A/Chicken/Fujian/F1255/2015	China	Fujian	Chicken	2015-9	EPI1743202	OK563160
A/Chicken/Jiangxi/F1298/2015	China	Jiangxi	Chicken	2015-9	EPI1743210	OK563161
A/Chicken/Jiangxi/F1303/2015	China	Jiangxi	Chicken	2015-9	EPI1743218	OK563152
A/Chicken/Jiangxi/F1370/2015	China	Jiangxi	Chicken	2015-9	EPI1743234	OK563230
A/Chicken/Guangdong/F1650/2015	China	Guangdong	Chicken	2015-9-6	EPI1743242	OK563153
A/Chicken/Shanghai/F2170/2015	China	Shanghai	Chicken	2015-9	EPI1743570	OK563149
A/Chicken/Shandong/F2991/2015	China	Shandong	Chicken	2015-7	EPI1743578	OK563163
A/Duck/Shandong/F3143/2015	China	Shandong	Duck	2015-7	EPI1743586	OK563164
A/Chicken/Guangdong/F4012/2015	China	Guangdong	Chicken	2015-9	EPI1743258	OK563165
A/Chicken/Guangdong/F4129/2015	China	Guangdong	Chicken	2015-9	EPI1743266	OK563166
A/Chicken/Guangdong/F4198/2015	China	Guangdong	Chicken	2015-9	EPI1743274	OK563167

Continued Table S1.

Isolate_Name	Country	Province	Host	Collection_Date	Segment_Ids GISAID	Segment_Ids GeneBank
A/Chicken/Shanghai/G378/2016	China	Shanghai	Chicken	2016-11	EPI1743594	OK563143
A/Chicken/Jiangxi/G705/2016	China	Jiangxi	Chicken	2016-11	EPI1743282	OK563142
A/Chicken/Jiangxi/G755/2016	China	Jiangxi	Chicken	2016-11	EPI1743290	OK563145
A/Chicken/Fujian/G1451/2016	China	Fujian	Chicken	2016-11	EPI1743298	OK563148
A/Chicken/Guangdong/G1586/2016	China	Guangdong	Chicken	2016-11	EPI1743306	OK563147
A/Chicken/Guangdong/G1728/2016	China	Guangdong	Chicken	2016-11	EPI1743314	OK563146
A/Chicken/Guangdong/G1921/2016	China	Guangdong	Chicken	2016-11	EPI1743322	OK563144
A/Chicken/Shanghai/H96/2017	China	Shanghai	Chicken	2017-10-24	EPI1743602	OK563138
A/Chicken/Shanghai/H97/2017	China	Shanghai	Chicken	2017-10-24	EPI1743604	OK563135
A/Chicken/Jiangsu/H224/2017	China	Jiangsu	Chicken	2017-10-24	EPI1743330	OK563131
A/Chicken/Jiangsu/H491/2017	China	Jiangsu	Chicken	2017-10-24	EPI1743336	OK563139
A/Chicken/Shanghai/H514/2017	China	Shanghai	Chicken	2017-10-24	EPI1743612	OK563132
A/Chicken/Guangdong/H938/2017	China	Guangdong	Chicken	2017-10-24	EPI1743343	OK563140
A/Chicken/Guangdong/H1027/2017	China	Guangdong	Chicken	2017-10-24	EPI1743350	OK563141
A/Chicken/Hunan/H1114/2017	China	Hunan	Chicken	2017-11-21	EPI1743358	OK563136
A/Chicken/Jiangxi/H1258/2017	China	Jiangxi	Chicken	2017-10-31	EPI1743366	OK563137
A/Chicken/Jiangxi/H1301/2017	China	Jiangxi	Chicken	2017-10-31	EPI1743374	OK563134
A/Chicken/Anhui/H1517/2017	China	Anhui	Chicken	2017-10-31	EPI1743382	OK563133
A/Chicken/Fuzhou/I25/2018	China	Fujian	Chicken	2018-09	EPI1743384	OK563127
A/Chicken/Fuzhou/I69/2018	China	Fujian	Chicken	2018-09	EPI1743386	OK563125
A/Chicken/Fuzhou/I73/2018	China	Fujian	Chicken	2018-09	PI1743388	OK563128
A/Chicken/Fuzhou/I84/2018	China	Fujian	Chicken	2018-09	PI1743390	OK563123
A/Chicken/Fuzhou/I92/2018	China	Fujian	Chicken	2018-09	EPI1743392	OK563129
A/Chicken/Changsha/I96/2018	China	Hunan	Chicken	2018-09	EPI1743614	OK563130
A/Chicken/Changsha/I97/2018	China	Hunan	Chicken	2018-09	PI1743616	OK563124
A/Chicken/Changsha/I112/2018	China	Hunan	Chicken	2018-09	EPI1743618	OK563122
A/Chicken/Nanjing/I256/2018	China	Jiangsu	Chicken	2018-09	EPI1743394	OK563126

Details about nucleotide sequences of H9N2 isolated in Southern China from 2013 to 2018 in this research.

Table S2. Selected H9N2 strains and HI titers of Cross-antigenic Assay

Anti-serum>>>>>>			HI titers ¹																																	
NO.	Abbr.	Antigen	I256	I112	I84	I97	I69	I25	H514	H224	H1114	H1517	G1728	G705	G1451	G1586	G378	G1921	F2170	E552	E2290	D345	D2641	H1301	H1258	H97	G755	F1650	D1021	A2093	B445	B469	441	2106	F98	
1	I256	A/Chicken/Nanjing/I256/2018	2048	256	512	1024	2048	256	4096	2048	1024	4096	256	1024	4096	1024	1024	512	256	512	256	512	1024	256	128	256	1024	512	1024	16	256	64	64	256	32	
2	I112	A/Chicken/Changsha/I112/2018	512	128	128	256	512	64	512	512	128	512	32	128	1024	256	128	64	64	128	128	128	1024	64	64	32	128	128	256	8	64	8	16	32	32	
3	I84	A/Chicken/Fuzhou/I84/2018	512	32	1024	128	512	128	512	256	64	1024	64	256	1024	256	128	128	128	128	128	256	128	128	128	128	256	64	128	8	32	8	32	64	32	
4	I97	A/Chicken/Changsha/I97/2018	1024	128	128	512	1024	64	1024	512	256	1024	64	256	2048	256	256	64	128	256	128	256	128	64	64	64	256	128	256	16	32	8	16	64	32	
5	I69	A/Chicken/Fuzhou/I69/2018	256	128	128	256	4096	512	1024	1024	64	512	512	256	2048	256	128	256	128	512	256	512	512	64	128	64	512	128	1024	32	128	16	32	64	128	
6	I25	A/Chicken/Fuzhou/I25/2018	256	128	256	128	4096	4096	1024	2048	64	512	512	1024	2048	1024	128	2048	256	1024	256	1024	1024	256	128	64	1024	128	1024	16	128	16	32	128	128	
7	H514	A/Chicken/Shanghai/H514/2017	1024	128	256	512	2048	256	2048	1024	256	1024	256	256	4096	512	256	256	128	512	512	256	1024	256	128	256	1024	128	1024	16	256	32	64	256	64	
8	H224	A/Chicken/Jiangsu/H224/2017	128	32	64	128	2048	512	1024	1024	64	512	256	256	2048	128	64	128	128	512	128	256	256	64	128	64	512	64	512	16	64	16	16	64	128	
9	H1114	A/Chicken/Hunan/H1114/2017	4096	512	512	2048	4096	256	2048	2048	2048	4096	256	1024	4096	1024	2048	512	512	1024	512	1024	2048	128	128	512	1024	512	1024	64	256	32	64	256	64	
10	H1517	A/Chicken/Anhui/H1517/2017	2048	256	512	1024	2048	256	2048	512	512	4096	128	1024	4096	1024	2048	512	256	512	512	512	512	128	64	256	1024	256	512	16	512	64	64	256	16	
11	G1728	A/Chicken/Guangdong/G1728/2016	256	32	64	128	4096	512	1024	1024	64	512	256	512	4096	128	128	128	128	512	256	512	512	128	128	128	512	64	512	16	64	16	32	64	128	
12	G705	A/Chicken/Jiangxi/G705/2016	512	64	128	256	2048	256	512	512	64	512	128	8192	2048	512	256	128	256	256	256	512	256	2048	64	128	128	512	256	256	4	64	8	32	128	32
13	G1451	A/Chicken/Fujian/G1451/2016	512	64	128	512	4096	512	2048	1024	128	1024	128	512	8192	256	128	256	256	512	128	512	512	512	512	256	256	1024	256	2048	16	256	64	64	256	256
14	G1586	A/Chicken/Guangdong/G1586/2016	1024	256	256	512	2048	512	2048	512	256	2048	128	1024	2048	2048	512	2048	256	512	256	1024	1024	128	64	128	512	256	1024	16	128	16	32	128	256	
15	G378	A/Chicken/Shanghai/G378/2016	2048	512	512	1024	4096	256	2048	1024	1024	4096	256	1024	4096	1024	2048	512	256	512	512	1024	1024	128	128	256	2048	512	1024	8	256	32	64	256	32	
16	G1921	A/Chicken/Guangdong/G1921/2016	512	128	256	256	1024	256	2048	256	128	1024	64	512	2048	512	256	2048	128	512	512	512	512	256	256	256	128	1024	128	1024	16	128	32	32	128	256
17	F2170	A/Chicken/Shanghai/F2170/2015	256	64	256	256	4096	1024	1024	1024	64	1024	512	2048	4096	512	128	1024	512	1024	1024	1024	1024	1024	128	128	128	1024	256	2048	16	128	8	32	256	512
18	E552	A/Duck/Zhejiang/E552/2014	1024	256	512	1024	4096	2048	2048	2048	256	2048	1024	2048	8192	1024	512	512	512	1024	1024	1024	1024	4096	256	256	512	2048	512	2048	16	512	64	64	512	512
19	E2290	A/Chicken/Anhui/E2290/2014	64	16	32	64	1024	64	512	128	16	64	16	4096	1024	512	16	16	16	256	4096	256	4096	32	64	128	1024	256	2048	4	512	32	256	512	128	
20	D345	A/Chicken/Zhejiang/D345/2013	256	64	128	128	4096	1024	1024	1024	64	1024	256	1024	4096	512	64	1024	256	512	1024	1024	2048	128	128	64	512	256	2048	16	64	16	32	128	256	
21	D2641	A/Chicken/Guangdong/D2641/2013	128	32	64	128	2048	128	512	128	32	64	32	4096	1024	512	32	32	16	256	4096	256	4096	64	128	128	1024	256	2048	8	512	32	256	512	256	
22	H1301	A/Chicken/Jiangxi/H1301/2017	128	32	32	32	256	64	128	32	8	64	32	32	1024	32	32	64	16	64	256	64	256	1024	1024	512	2048	1024	4096	128	1024	256	512	1024	1024	
23	H1258	A/Chicken/Jiangxi/H1258/2017	32	16	32	16	128	16	64	32	8	16	16	16	512	16	8	32	8	32	128	64	128	1024	512	512	256	2048	512	2048	128	512	128	256	1024	1024
24	H97	A/Chicken/Shanghai/H97/2017	64	16	32	32	128	32	128	32	8	32	16	32	512	32	16	64	8	32	128	64	128	512	512	512	2048	1024	4096	128	1024	256	512	1024	1024	
25	G755	A/Chicken/Jiangxi/G755/2016	128	32	32	32	256	64	128	64	8	64	16	64	1024	32	16	64	32	64	256	64	256	1024	1024	512	4096	1024	4096	64	1024	256	512	1024	2048	
26	F1650	A/Chicken/Guangdong/F1650/2015	16	16	16	16	64	32	64	16	2	16	16	16	256	16	8	32	16	32	128	32	128	512	512	256	2048	512	2048	64	512	128	256	512	1024	
27	D1021	A/Chicken/Hunan/D1021/2013	32	32	32	16	128	32	64	32	4	16	16	32	256	32	16	64	16	32	256	32	128	512	512	256	2048	512	4096	128	1024	64	256	1024	1024	
28	A2093	A/chicken/Jiangsu/A2093/2011	32	128	64	32	128	32	256	64	2	128	16	128	256	32	64	128	128	64	512	64	256	512	256	128	4096	512	4096	256	256	64	512	1024	2048	
29	B445	A/chicken/Hunan/B445/2011#	128	32	32	32	512	64	256	64	8	128	16	64	2048	64	32	128	8	64	512	256	256	2048	1024	1024	1024	4096	2048	8192	512	2048	1024	2048	4096	4096
30	B469	A/chicken/Shanghai/B469/2011#	64	64	32	256	64	256	64	8	128	16	64	2048	64	32	64	16	128	256	256	128	2048	1024	1024	2048	1024	8192	128	1024	1024	1024	1024	2048	2048	
31	441	A/Chicken/Shanghai/441/2009#	64	64	64	32	256	64	256	32	4	128	8	32	2048	64	32	128	16	128	512	256	256	4096	1024	1024	4096	2048	8192	256	4096	1024	2048	4096	2048	
32	2106	A/chicken/Hunan/2106/2009#	128	64	128	64	512	128	256	64	8	128	16	128	2048	64	64	128	32	128	512	256	256	2048	1024	1024	4096	2048	8192	512	4096	1024	2048	4096	2048	
33	F98	A/Chicken/Shanghai/F/1998	8	4	4	4	8	8	8	8	1	8	1	8	64	8	8	8	8	8	64	8	16	64	256	32	256	64	1024	16	256	16	64	256	1024	

NOTE: The bold line grouped the virus strains basing on the time-scaled tree. 1 The background color depth were based on the value of HI titers, red was the high HI titer, indicating close antigenicity; light yellow was low HI titers indicating big distance in activity.

TableS3.The antigenic distances

Strains	I256	I112	I84	I97	I69	I25	H514	H224	H1114	H1517	G1728	G705	G1451	G1586	G378	G1921	F2170	E552	E2290	D345	D2641	H1301	H1258	H97	G755	F1650	D1021	A2093	B445	B469	441	2106	F98*	
I256	0	2.562672	5.131206	1.393596	5.919718	7.881337	4.472925	5.312156	1.542524	2.405899	6.922	7.703483	5.996075	5.053535	2.421182	7.17391	4.832598	5.435165	8.265712	5.432955	7.0213	9.075241	9.345873	8.231075	8.850569	8.757525	9.324753	8.865774	8.942386	8.965403	9.080415	9.050292	9.368326	
I112	2.562672	0	5.314532	2.552292	5.568363	7.328958	4.245524	5.137418	2.760476	2.40868	6.300339	7.835448	5.980995	4.364124	2.586355	6.50359	4.755528	5.244807	8.285411	4.650438	6.963964	9.81761	9.320452	8.317152	8.393333	8.658722	9.171505	8.708638	8.895732	9.01596	8.976053	8.935262	9.268199	
I84	5.131206	5.314532	0	5.197315	6.452434	7.083417	5.436593	6.006364	5.729935	4.52018	6.324828	7.815711	6.325019	5.636071	5.234084	6.834875	5.307711	5.921823	8.323905	5.70759	7.242346	9.107316	9.41676	6.609893	9.028128	9.063067	9.439288	9.021588	9.026057	9.019331	9.142646	9.123295	9.468001	
I97	1.393596	2.552292	5.197315	0	5.347661	7.502283	3.955802	4.671734	2.214893	2.450482	6.089312	7.544501	5.1145	4.886915	2.850419	7.15584	4.125076	4.806733	8.106401	5.016207	6.499323	9.158624	9.441496	8.252934	8.855918	8.846322	9.35582	8.989928	9.011616	9.065073	9.195414	9.133231	9.444972	
I69	5.919718	5.568363	6.452434	5.347661	0	5.159209	4.32314	2.849926	6.021592	5.368188	3.90788	6.853161	3.923171	5.337656	6.095561	6.083674	3.696435	2.840586	7.56688	3.089213	5.932548	9.607399	9.968952	9.276676	9.527074	9.566021	9.688081	9.523878	9.570713	9.537896	9.656944	9.646147	9.897036	
I25	7.881337	7.328958	7.083417	7.502283	5.159209	0	6.650762	4.23779	7.998637	7.492371	4.292045	7.550081	6.339336	6.012235	7.946663	5.026936	5.636023	4.406349	8.072407	4.909443	6.773855	8.783775	9.003262	8.782658	8.684565	8.903125	8.852719	8.854365	8.839197	8.828113	8.92728	8.886583	8.952108	
H514	4.472925	4.245524	5.436593	3.955802	4.32314	6.650762	0	4.43699	5.231507	3.651252	5.467397	7.628805	3.936131	4.032269	4.789201	5.349559	4.261779	3.897711	8.042498	4.115855	6.681048	9.536957	9.977535	9.078128	9.438988	9.575686	9.815564	9.526972	9.526636	9.482756	9.660624	9.637542	9.961707	
H224	5.312156	5.137418	6.006364	4.671734	2.849926	4.23779	4.43699	0	5.435653	5.323103	3.235209	7.442363	4.344656	5.315735	6.03424	6.063722	3.391681	2.273741	8.236392	3.615341	6.223734	9.509087	9.835807	9.041062	9.392615	9.487473	9.693737	9.422799	9.516732	9.481874	9.639348	9.596759	9.79809	
H1114	1.542524	2.760476	5.729935	2.214893	6.021592	7.998637	5.231507	5.435653	0	3.309781	7.147486	7.873318	6.446914	5.673663	2.986068	7.420173	5.218179	5.674899	8.1677	5.603454	7.131749	8.869211	9.079233	8.031519	8.572084	8.504412	9.035475	8.64102	8.755705	8.783591	8.865764	8.835121	9.106218	
H1517	2.405899	2.40868	4.52018	2.450482	5.368188	7.492371	3.651252	5.323103	3.309781	0	6.39834	7.71423	5.365906	4.281339	1.649573	6.558804	4.412411	5.098631	8.273432	4.588504	6.963768	9.234261	9.578149	8.530828	8.92418	8.97151	9.479434	9.114321	9.101721	9.124286	9.27609	9.233395	9.538811	
G1728	6.922	6.300339	6.324828	6.089312	3.90788	4.292045	5.467397	3.235209	7.147486	6.39834	0	7.342109	4.651798	5.927761	7.115933	6.427404	4.015395	3.367898	7.98302	4.351723	5.875337	9.198454	9.377264	7.49625	8.889199	9.123379	9.208668	9.179682	9.138553	9.173451	9.313846	9.21874	9.288716	
G705	7.703483	7.835448	7.815711	7.544501	6.853161	7.500081	6.28805	7.442363	7.873318	7.71423	7.342109	0	7.524424	6.652424	7.692876	7.854345	6.721169	7.121311	5.31053	7.255276	4.414254	9.135365	9.308626	9.965614	9.030384	8.950766	9.070756	9.075508	8.897514	8.995736	8.900234	8.923358	9.208634	
G1451	5.996075	5.980995	6.325019	5.1145	3.923171	6.339336	3.936131	4.344656	6.446914	5.365906	4.651798	7.524424	0	6.118257	6.24482	7.061541	4.193409	4.352785	8.064987	4.661316	6.388082	8.571855	9.74952	7.986393	8.62412	8.62866	8.751944	8.806602	8.652698	8.500465	8.762905	8.681916	9.121537	
G1586	5.053535	4.364124	5.636071	4.886915	5.337656	6.012235	4.032269	5.315735	5.673663	4.281339	5.927761	6.652424	6.118257	0	5.105069	4.381258	4.675081	4.633572	7.332592	3.696977	5.802246	4.441115	9.850815	9.037984	9.292782	9.285489	9.576583	9.381043	9.30172	9.34351	9.429806	9.411379	9.691357	
G378	2.421182	2.586355	5.234084	2.850419	6.099561	7.946663	4.789201	6.03424	2.986068	1.649573	7.115933	7.692876	6.24482	5.105069	0	7.22907	5.390295	5.936294	8.194701	5.574939	7.242847	8.926354	9.192691	8.177693	8.4896	8.56844	9.137526	8.755638	8.732102	8.800014	9.07771	8.868982	9.182034	
G1921	7.17391	6.50359	6.834875	7.15584	6.083674	5.026936	5.349559	6.063722	7.420173	6.558804	6.427404	7.854345	7.061541	4.381258	7.22907	0	5.800921	5.030164	8.254384	4.374949	7.534138	8.901738	9.183836	9.016387	8.938791	9.028341	9.033042	8.908635	9.010741	8.940295	9.038803	9.042307	9.081208	
F2170	4.832598	4.755528	5.307711	4.125076	3.696435	5.636023	4.261779	3.391681	5.218179	4.412411	4.015395	6.721169	4.193409	4.675081	5.390295	5.800921	0	2.681953	8.124291	3.151879	5.876411	9.501548	8.813192	8.953026	9.149506	9.341167	9.568465	9.31513	9.48394	9.48367	9.59839	9.524769	9.623681	
E552	5.435165	5.244807	5.921823	4.806733	2.840586	4.406349	3.897711	2.273741	5.674899	5.098631	3.367898	7.121311	4.352785	4.633572	5.936294	5.030164	2.681953	0	7.668952	2.738034	5.790345	9.465177	9.862179	9.041633	9.371167	9.479878	9.599457	9.453132	9.4348	9.420637	9.578361	9.535566	9.803974	
E290	8.265712	8.285411	8.323905	8.106401	7.56688	8.072407	8.042498	8.236392	8.1677	8.273432	7.98302	5.31053	8.064987	7.332592	8.194701	8.254384	8.124291	7.668952	0	7.720218	3.504082	8.595847	8.798185	8.487513	8.258641	8.402916	8.148384	8.475178	8.200649	8.421267	8.117975	8.165836	8.587564	
D345	5.432955	4.650438	5.70759	5.016207	3.089213	4.909443	4.115855	3.615341	5.603454	4.588504	4.351723	7.255276	4.661316	3.696977	5.574939	4.374949	3.151879	2.738034	7.720218	0	5.990248	9.138928	9.590372	8.758736	9.078244	9.05803	9.226193	9.096303	9.158444	9.012624	9.1867	9.152861	9.520056	
D2641	7.0213	6.963964	7.242346	6.493923	5.932548	6.773855	6.681048	6.223734	7.131749	6.963768	5.875337	4.414254	6.388082	5.802246	7.242847	7.534138	5.876411	5.790435	3.504082	5.990248	0	9.278386	9.49734	8.811321	8.887164	8.991307	8.990632	9.191973	8.937074	9.128872	9.006251	8.976326	9.333152	
H1301	9.075241	9.81761	9.107316	9.158624	9.607399	9.783775	9.536957	9.509087	8.869211	9.234261	9.198454	9.135365	8.571855	9.441115	8.926354	8.901738	9.501548	9.465177	8.595847	9.138928	9.278386	0	3.3751	2.875827	4.180321	2.680892	2.69897	4.511973	2.500152	2.407345	2.446949	2.394141	3.943625	
H1258	9.345873	9.320452	9.41676	9.441496	9.441496	9.689952	9.003262	9.977535	9.835807	9.079233	9.578149	9.377264	9.308626	8.974952	9.850815	9.192691	9.183836	8.813192	9.862179	9.798185	9.590372	9.49734	3.3751	0	3.408366	3.632254	3.343648	3.095849	4.227214	4.11268	3.18072	3.446859	3.386343	4.012515
H97	8.231075	8.317152	8.609893	8.252934	9.276676	8.782658	9.078128	9.041062	8.031519	8.530828	8.749625	8.965614	7.986393	9.037984	8.177693	9.016387	8.953026	9.041633	8.487513	8.758736	8.811321	2.875827	3.408366	0	4.276551	2.02648	2.386822	4.408336	2.600765	2.286919	2.820729	2.768005	3.624888	
G755	8.850569	8.393333	9.028128	8.855918	9.527074	8.684565	9.438988	9.392615	8.572084	8.92418	8.889199	9.030384	8.62412	9.292782	8.4896	8.938791	9.149506	9.371167	8.258641	9.078244	8.887164	4.180321	3.632254	4.276551	0	3.600799	3.676147	3.631975	4.613508	4.360013	3.665238	3.536102	3.992078	
F1650	8.757525	8.658722	9.063067	8.846322	9.566021	8.903125	9.575686	9.487473	8.504412	8.97151	9.123379	9.950766	6.62866	9.285489	8.56844	9.028341	9.341167	9.479878	8.402916	9.05803														