

Supplementary Materials: Evolution and Divergence of H3N8 Equine Influenza Viruses Circulating in the United Kingdom from 2013 to 2015

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Figure S1. Amino acid alignment comparing amino acid numbers of equine influenza virus N8 neuraminidase against H5N1 neuraminidase from 2HTY pdb structure file.

N1 numbering:	10	20	30	40	50	60	70	80
N8 numbering:	8	18	28	38	48	58	68	78
N1 (H5N1: 2HTY)	-----							
N8 (Equine: KF559336)	--MNPQKII TIGSASLGIL IINVLHVVS IIVTVLVN NNGLNCKGT IIREYNETVR VEKITQWHT SAIKYIERPP							

N1 numbering:	90	100	110	120	130	140	150	160
N8 numbering:	88	98	108	118	128	138	148	158
N1 (H5N1: 2HTY)	--VKLAGNSS LCPINGWAVY SKDNSIRIGS KGDVVFVIREP FISCCHLECR TFFLTQGALL NDKHSNGTVK DRSPHRTLMS							
N8 (Equine: KF559336)	NEYVMNTEP ..EAQ.F.PFG..... R.H..... .V...PS...S...Y.....							

N1 numbering:	169A	179	189	199	209	219	229	239
N8 numbering:	168	178	188	198	208	218	228	238
N1 (H5N1: 2HTY)	CPVGEAPSPY NSRFESVAWS ASACHDGTSW LTIGISGPDN GAVAVLKYNG IITDTIKSWR NNILRTQESE CACVNGSCPT							
N8 (Equine: KF559336)	VKI.QS.NV. QA..... .T.....KK. M...VT.... Q.I..VN.G. VPV.I.N..A GD.....S .T.IK.N.YW							

N1 numbering:	249	259	269	279	289	299	310	320
N8 numbering:	248	258	268	278	288	298	308	318
N1 (H5N1: 2HTY)	VMTDGPSNGQ ASYKIFKMEK GKVVKSVELD APNYHYECS CYPNAGEITC VCRDNWHGSN RPWVSFNQNL EYQIGYICSG							
N8 (Equine: KF559336)A.R. .K.R....AKD .R.IGQTDIS FNGG.I....E.KVE. I.....T.T. ..ILVISSD. S.TV..L.A.							

N1 numbering:	330	341	351	361	371	381	391	402
N8 numbering:	328	338	348	358	368	378	388	398
N1 (H5N1: 2HTY)	VFGDNPRPND G--TGSCGPV SSNGAYGVKG FSPKYGNVW IGRTKSTNSR SGFEMIWDPN GWTETDSSFS VKQDIVAITD							
N8 (Equine: KF559336)	IPT.T..GE. SQF....TSP LG.KG..... .G.RQ.TD.. A...I.RT..I.KIR. ...QNSKDQI RR.V.IDDPN							

N1 numbering:	412	418	428	439	449	459	469
N8 numbering:	408	418	428	438	448	458	468
N1 (H5N1: 2HTY)	WSGYSGSFVQ HPELTGLDCI RPCFWVELIR GRPKESTIWT SGSSISFCGV NSDTVGWSWP DGAELPFTID K-						
N8 (Equine: KF559336)TL PI...KKG.L V.....M... .K.E.T.... .S...VM... DHKIAS...H ...I...D... .M						

■ - N1 structure file (2HTY) has no 301

■ - N1 structure file (2HTY) has no 334

■ - N1 structure file (2HTY) has no 337 or 338

■ - N1 structure file (2HTY) has no 393

■ - N1 structure file (2HTY) has 412, 412A, 412B, 412C and 412D

■ - N1 structure file (2HTY) has no 434

Table S1. Genetic similarity between the 144- and 179-groups and the recommended FC2 vaccine strain.

		Vaccine	144-Group
HA	Vaccine	-	98.4%
(nt)	179-group	98.5%	97.9%
HA	Vaccine	-	98.2%
(aa)	179-group	98.1%	97.7%
NA	Vaccine	-	98.2%
(nt)	179-group	98.3%	96.9%
NA	Vaccine	-	98.0%
(aa)	179-group	98.7%	97.2%

Percentage similarity shown. HA = haemagglutinin, NA = neuraminidase, nt = nucleotide, aa = amino acid. Recommended vaccine strain is A/eq/Richmond/1/07. A/eq/Northamptonshire/4/15 used as the most recent isolate of the 144-group, A/eq/Ayrshire/1/13 used as the most recent isolate of the 179-group.