Supporting Information

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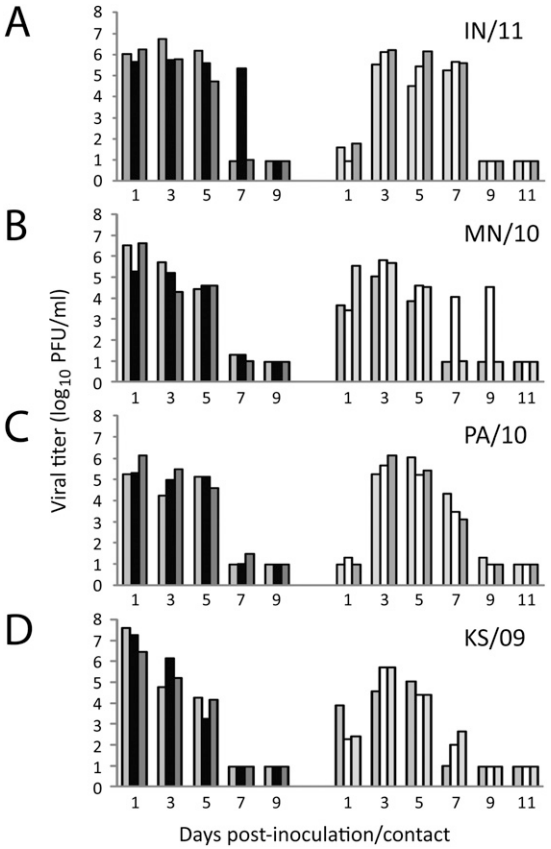

Fig. S1. Transmissibility of A(H3N2)v influenza viruses among ferrets in the direct-contact (DC) model. Three ferrets each were inoculated intranasally (i.n.) with 10^6 pfu of A/Indiana/08/11 (IN/11) virus (*A*), A/Minnesota/11/10 (MN/10) virus (*B*), A/Pennsylvania/14/10 (PA/10) virus (*C*), or A/Kansas/13/2009 (KS/09) virus (*D*); a naïve ferret was placed in each cage 24 h after inoculation to initiate contact. Nasal washes were collected from inoculated (dark bars) and contact (light bars) ferrets every other day starting at 1 d postinoculation (dpi) or postcontact (dpc). Titers are expressed as $\log_{10}$ pfu/mL; the limit of detection was 10 pfu. Values for individual ferrets are shown.

Table S1. Comparison of receptor-binding site (RBS) of hemagglutinin (HA) of H3N2 influenza viruses

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1967-68 Pandemic                                                    133
A/Aichi/2/1968          DLFVERSKAFSNCYPYDVPDYASLRSLVASSGTLEFITEGFTWTGVTQNG 150

Seasonal Strains
A/Sydney/5/1997         DLFVERSKAYSNCYPYDVPDYASLRSLVASSGTLEFNNESFNWTGVAQNG 134
A/Moscow/10/1999        DLFVERSKAYSNCYPYDVPDYASLRSLVASSGTLEFNNESFNWTGVAQNG 150
A/Wyoming/3/2003        DLFVERSKAYSNCYPYDVPDYASLRSLVASSGTLEFNNESFNWAGVTQNG 150
A/California/7/2004     DLFVERSKAYSNCYPYDVPDYASLRSLVASSGTLEFNNESFNWTGVTQNG 150
A/Wisconsin/67/2005     DLFVERSKAYSNCYPYDVPDYASLRSLVASSGTLEFNDESFNWTGVTQNG 150
A/Brisbane/10/2007      DLFVERSKAYSNCYPYDVPDYASLRSLVASSGTLEFNNESFNWTGVTQNG 150
A/Perth/16/2009         DLFVERSKAYSNCYPYDVPDYASLRSLVASSGTLEFNNESFNWTGVTQNG 150

TRS H3N2
A/Kansas/13/2009        DLFVERSTAYSNCYPYYVPDYASLRSLVASSGTLEFTQESFNWTGVTQDG 150
A/Minnesota/11/2010     DLFVERSTAYSNCYPYYVPDYATLRSLVASSGNLEFTQESFNWTGVAQDG 150
A/Pennsylvania/14/2010  DLFVERSTAYSNCYPYYVPDYVSLRSLVASSGTLEFTQENFNWTGVAQDG 150
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1967-68 Pandemic          137   145     153 156                       183
A/Aichi/2/1968          GSNACKRGPGSGFFSRLNWLTKSGSTYPVLNVTMPNNDNFDKLYIWGIHH 200

Seasonal Strains
A/Sydney/5/1997         TSYACKRSSIKSFFSRLNWLHQLKYKYPALNVTMPNNDKFDKLYIWGVHH 184
A/Moscow/10/1999        TSSSCKRRSIKSFFSRLNWLHQLKYRYPALNVTMPNNDKFDKLYIWGVHH 200
A/Wyoming/3/2003        TSSACKRRSNKSFFSRLNWLTHLKYKYPALNVTMPNNEKFDKLYIWGVHH 200
A/California/7/2004     TSSSCKRRSNNSFFSRLNWLTHLKFKYPALNVTMPNNEKFDKLYIWGVHH 200
A/Wisconsin/67/2005     TSSSCKRRSNNSFFSRLNWLTHLKFKYPALNVTMPNNEKFDKLYIWGVHH 200
A/Brisbane/10/2007      TSSACIRRSNNSFFSRLNWLTHLKFKYPALNVTMPNNEKFDKLYIWGVHH 200
A/Perth/16/2009         TSSACIRRSKNSFFSRLNWLTHLNFKYPALNVTMPNNEQFDKLYIWGVHH 200

TRS H3N2
A/Kansas/13/2009        SSYTCRRKSVNSFFSRLNWLHNLDYKYPALNVTMPNNDKFDKLYIWGVHH 200
A/Minnesota/11/2010     SSYACRRGSVNSFFSRLNWLYNLNYKYPEQNVTMPNNDKFDKLYIWGVHH 200
A/Pennsylvania/14/2010  SSYACRRKSVNSFFSRLNWLYNLNYKYPALNVTMPNNDNFDKLYIWGVHH 200
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1967-68 Pandemic            190  193                        222 225 228
A/Aichi/2/1968          PSTNQEQTSLYVQASGRVTVSTRRSQQTIIPNIGSRPWVRGLSSRISIYW 250

Seasonal Strains
A/Sydney/5/1997         PSTDSDQTSIYAQASGRVTVSTKRSQQTVIPNIGSRPWVRGISSRISIHW 234
A/Moscow/10/1999        PSTDSDQTSLYTQASGRVTVSTKRSQQTVIPNIGSRPWVRGISSRISIYW 250
A/Wyoming/3/2003        PVTDSDQISLYAQASGRITVSTKRSQQTVIPNIGYRPRVRDISSRISIYW 250
A/California/7/2004     PGTNNDQISLYTQASGRITVSTKRSQQTVIPNIGSRPRVRDIPSRISIYW 250
A/Wisconsin/67/2005     PVTDNDQIFLYAQASGRITVSTKRSQQTVIPNIGSRPRIRNIPSRISIYW 250
A/Brisbane/10/2007      PGTDNDQIFPYAQASGRITVSTKRSQQTVIPNIGSRPRVRNIPSRISIYW 250
A/Perth/16/2009         PGTDKDQIFLYAQASGRITVSTKRSQQTVSPNIGSRPRVRNIPSRISIYW 250

TRS H3N2
A/Kansas/13/2009        PGTDRDQTNLYVQASGRVTVSTKRSQQTVIPNIGSRPWVRGVSSIISIYW 250
A/Minnesota/11/2010     PGTDKDQTNLYVQASGRVIVSTKRSQQTVIPNIGSRPWVRGVSSIISIYW 250
A/Pennsylvania/14/2010  PGTDKDQTNLYIQASGRVTVSTKRSQQTVIPNIGSRPWVRGVSSIISIYW 250
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Shown is the sequence alignment of the part of the head region of HA1 that comprises the RBS; the residue positions highlighted in green are those that are critically involved in glycan-receptor binding.

Table S2. Expanded nomenclature of glycans used in the glycan array

Glycan	Expanded nomenclature
3′SLN	Neu5Acα2–3Galβ1–4GlcNAcβ1-
6′SLN	Neu5Acα2–6Galβ1–4GlcNAcβ1-
3′SLN-LN	Neu5Acα2–3Galβ1–4GlcNAcβ1–3Galβ1–4GlcNAcβ1-
6′SLN-LN	Neu5Acα2–6Galβ1–4GlcNAcβ1–3Galβ1–4GlcNAcβ1-
3′SLN-LN-LN	Neu5Acα2–3Galβ1–4GlcNAcβ1–3Galβ1–4GlcNAcβ1–3Galβ1–4GlcNAcβ1-

All of the sugars are linked via a spacer to biotin (-Sp-LC-LC-biotin as described at http://www.functionalglycomics.org/static/consortium/resources/resourcecored5.shtml). α/β, anomeric configuration of the pyranose sugars; Gal, D-galactose ; GlcNAc, *N*-acetyl D-glucosamine; Neu5Ac, *N*-acetyl D-neuraminic acid.