

Serologic Evidence of H14 Influenza A Virus Introduction into North America

Technical Appendix

Technical Appendix Table 1. List of antigens used for microneutralization assays of samples from ducks, North America

A/mallard/MN/A10-4823/2010 (H1N1)
A/mallard/MN/A108-2755/2008 (H2N3)
A/mallard/MN/A10-2593/2010 (H3N8)
A/mallard/MN/A110-3208/2010 (H4N6)
A/mallard/MN/A111-3933/2011 (H5N1)
A/mallard/MN/A108-2721/2008 (H6N1)
A/mallard/MN/A108-3770/2009 (H7N9)
A/mallard/MN/SG-01048/2008 (H8N4)
A/RUTU/DE/A111-809/2011 (H9N2)
A/mallard/MN/SG-00999/2008 (H10N7)
A/mallard/MN/SG-00930/2008 (H11N9)
A/mallard/MN/SG-3285/2007 (H12N5)
A/blue-winged teal/TX/A113-1028/2010 (H14N5)

Technical Appendix Table 2. Subtype-specific virus neutralization data for H1–H12 from 23 birds positive for H14, North America*

Date	Sample ID	Age†	Species‡	Group 1								Group 2					
				H9 Clade			H1 Clade				H11 Clade	H7 Clade		H3 Clade			
				H9N2	H8N4	H12N5	H5N1	H2N3	H1N1	H6N1	H11N9	H7N9	H10N7	H3N8	H4N6	H14N5	
2007	Sep 17	AI07-4825	UA	MALL	<20§	<20	<20	<20	<20	<20	<20	160	80	<20	640	640	40
2012	Sep 17	AI12-2725	HY	MALL	<20	<20	80	<20	<20	<20	<20	<20	<20	<20	<20	<20	40
2013	Mar 1	AI13-112	AHY	BWTE	<20	<20	40	<20	<20	<20	<20	20	<20	40	<20	<20	40
	Mar 1	AI13-114	AHY	BWTE	20	320	<20	20	<20	<20	<20	20	<20	<20	40	<20	40
	Mar 1	AI13-137	AHY	BWTE	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	20
	Mar 1	AI13-6	AHY	BWTE	<20	<20	<20	<20	<20	<20	<20	20	<20	<20	<20	<20	20
	Mar 5	AI13-393	HY	BWTE	80	<20	640	640	640	640	640	<20	<20	160	<20	40	160
	Mar 5	AI13-433	AHY	AGWT	<20	<20	<20	<20	<20	20	<20	<20	<20	<20	<20	<20	20
	Mar 6	AI13-511	AHY	BWTE	<20	<20	<20	40	<20	<20	40	<20	<20	<20	<20	<20	20
	Mar 6	AI13-528	AHY	BWTE	<20	<20	320	<20	<20	<20	<20	<20	<20	<20	<20	<20	40
	Mar 7	AI13-538	AHY	BWTE	<20	<20	<20	<20	<20	<20	<20	<20	<20	20	<20	160	160
	Mar 7	AI13-541	AHY	BWTE	<20	80	80	40	<20	<20	640	160	<20	80	160	160	20
	Mar 7	AI13-554	AHY	BWTE	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	20
	Mar 15	AI13-1002	AHY	BWTE	<20	<20	<20	20	<20	<20	40	<20	<20	20	40	<20	80
	Mar 15	AI13-1072	AHY	AGWT	<20	<20	<20	<20	20	<20	<20	<20	<20	<20	<20	<20	20
	Aug 28	AI13-3025	AHY	MALL	<20	20	<20	<20	<20	<20	<20	20	<20	<20	40	<20	20
	Aug 28	AI13-3035	AHY	MALL	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	40	20
	Aug 28	AI13-3109	HY	MALL	<20	20	80	<20	<20	<20	<20	<20	<20	<20	<20	<20	80
	Sep 4	AI13-3115	AHY	MALL	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	80
	Sep 4	AI13-3123	AHY	MALL	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	40	20
	Sep 4	AI13-3125	HY	MALL	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	20
	Sep 12	AI13-3209	HY	MALL	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	40	20
2014	Mar 7	AI14-49	AHY	BWTE	20	80	<20	<20	<20	<20	640	20	<20	160	40	20	20

*The volume of sera for 2 of the H14 positive samples was inadequate for testing against the complete panel of antigens. HA subtypes are organized based on phylogenetic relationships because patterns of cross-reactivity would be expected on the basis of clade membership. Case-patients are identified by sample ID.

†Abbreviations for age are: UA, unknown age; HY, hatched-year bird; AHY, after hatched-year bird.

‡Abbreviations for species are: MALL, mallard; BWT, blue-winged teal; AGWT, American green-winged teal.

§Virus neutralization antibody titers of <20 indicate negative results and titers of >20 are considered positive. Bold numbers indicate values >20.