Suppl. Table S2. Detailed nucleotide pairwise identity of ORF sequences of PB2 gene segment of full-length H14 viruses from Guatemala (n=40), North America (n=12), and Eurasia (n=4) during 1982-2019.

# virus	Strain	Reference ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
1	A/blue winged teal/Guatemala/CIP049H105 15-A/2011	KJ195673																																																								
2	A/blue winged teal/Guatemala/CIP049H105 31/2011	KY644428	99.6																																																							
3	A/blue winged teal/Guatemala/CIP049H106 62/2011	KJ195665	90.3	90.3																																																						
4	A/blue winged teal/Guatemala/CIP049H108 02/2012	KY644513	94.3	94.3	89.6																																																					
5	A/blue winged teal/Guatemala/CIP049H108 04/2012	KX960435	94.2	94.2	89.3	99.7																																																				
6	A/blue winged teal/Guatemala/CIP049H108 11/2012	KX960399	94.3	94.3	89.5	99.8	99.8																																																		
7	A/blue winged teal/Guatemala/CIP049H109 49/2012	KY644328	94.3	94.3	89.5	99.8	99.8	100																																																		
8	A/blue winged teal/Guatemala/CIP049H109 67/2012	KY673175	94.6	94.5	89.8	94.5	94.3	94.4	94.4																																																	
9	A/blue winged teal/Guatemala/CIP049H109 76/2012	KX960378	94.3	94.3	89.4	99.7	99.8	100	100	94.3																																																
10	A/blue winged teal/Guatemala/CIP049H110 04/2012	KY644459	92.5	92.3	90	92.3	92	92.1	92.1	91.9	92.1																																																
11	A/blue winged teal/Guatemala/CIP049H110 31/2012	KY644391	94.4	94.4	89.5	98.3	98.1	98.1	98.1	94.5	98	91.9																																															
12	A/blue winged teal/Guatemala/CIP049H113 07/2013	KY644499	94.3	94.3	89.6	99.9	99.6	99.7	99.7	94.5	99.6	92.3	98.2																																															
13	A/blue winged teal/Guatemala/CIP049H113 08/2013	KY644373	94.3	94.3	89.6	99.6	99.3	99.4	99.4	94.3	99.4	92.1	98	99.5																																															
14	A/blue winged teal/Guatemala/CIP049H113 74/2013	KY673166	94.6	94.5	89.7	94.4	94.2	94.3	94.3	99.6	94.3	91.9	94.4	94.4	94.3																																															
15	A/blue winged teal/Guatemala/CIP049H113 76/2013	KY644354	94.3	94.3	89.6	99.6	99.4	99.5	99.5	94.2	99.4	92.1	98	99.5	100	94.2																																														
16	A/blue winged teal/Guatemala/CIP049H116 120/2013	MK327715	92.1	91.9	90.1	91.4	91.1	91.2	91.2	91.6	91.1	95.5	91.3	91.4	91.4	91.5	91.4																																														
17	A/blue winged teal/Guatemala/CIP049H117 13/2013	MK327683	92.1	92	88.9	92.1	92	92	92	91.5	92	97.8	91.8	92.1	92	91.5	92.1	94.4																																													
18	A/blue winged teal/Guatemala/CIP049H117 34/2013	MK327691	92.1	91.9	90.1	91.4	91.1	91.2	91.2	91.6	91.1	95.5	91.3	91.4	91.4	91.5	91.4	100	94.4																																													
19	A/blue winged teal/Guatemala/CIP049H117 36/2013	MK327699	92.1	91.8	90.1	91.4	91.1	91.2	91.2	91.6	91.2	95.3	91.3	91.4	91.4	91.5	91.4	99.9	94.3	99.9																																												
20	A/blue winged teal/Guatemala/CIP049H117 38/2013	MK326653	92.1	91.8	90.1	91.4	91.1	91.2	91.2	91.6	91.2	95.3	91.3	91.4	91.4	91.5	91.4	99.9	94.3	99.9	100																																												
21	A/blue winged teal/Guatemala/CIP049H117 99/2013	MK327731	92.1	91.8	90.1	91.3	91	91.1	91.1	91.5	91	95.4	91.2	91.3	91.3	91.4	91.3	99.8	94.3	99.9	99.9	99.9																																											
22	A/blue winged teal/Guatemala/CIP049H117 123/2013	MK327723	92.1	91.9	90.1	91.4	91.1	91.2	91.2	91.6	91.1	95.5	91.3	91.4	91.4	91.5	91.4	100	94.4	100	99.9	99.9	99.9																																										
23	A/blue winged teal/Guatemala/CIP049H117 143/2013	MK327755	92.2	91.9	90	91.4	91	91.1	91.1	91.6	91.1	95.3	91.2	91.4	91.4	91.5	91.3	99.9	94.5	99.9	99.7	99.7	99.8	99.9																																										
24	A/blue-winged teal/Guatemala/CIP049H123 13/2014	OP144065	98.4	98.2	89.8	93.9	93.7	93.8	93.8	94.3	93.8	92.1	93.9	93.9	93.9	94.4	93.8	91.3	91.8	91.3	91.3	91.3	91.2	91.3	91.4																																									
25	A/blue-winged teal/Guatemala/CIP049H123 16/2014	OP144073	91.6	91.4	89.4	91.6	91.3	91.4	91.4	91.2	91.4	97	91.1	91.6	91.4	91.2	91.4	94.8	95.7	94.8	94.6	94.6	94.7	94.8	94.7	91.3																																								
26	A/blue-winged teal/Guatemala/CIP049H123 33/2014	OP144081	98.3	98.1	89.7	93.9	93.7	93.8	93.8	94.2	93.8	92	93.9	93.9	93.9	94.3	93.9	91.3	91.8	91.3	91.3	91.3	91.2	91.3	91.4	99.8	91.2																																							
27	A/blue-winged teal/Guatemala/CIP049H123 57/2014	OP144089	98.4	98.2	89.8	93.9	93.7	93.8	93.8	94.3	93.8	92.1	93.9	93.9	93.9	94.4	93.8	91.3	91.8	91.3	91.3	91.3	91.2	91.3	91.4	100	91.3	99.8																																					
28	A/blue-winged teal/Guatemala/CIP049H123 58/2014	OP144097	98.4	98.2	89.8	93.9	93.7	93.8	93.8	94.3	93.8	92.1	93.9	93.9	93.9	94.4	93.8	91.3	91.8	91.3	91.3	91.3	91.2	91.3	91.4	100	91.3	99.8	100																																					
29	A/blue-winged teal/Guatemala/CIP049H123 59/2014	OP144105	98.4	98.2	89.8	93.9	93.7	93.8	93.8	94.3	93.8	92.1	93.9	93.9	93.9	94.4	93.8	91.3	91.8	91.3	91.3	91.3	91.2	91.3	91.4	100	91.3	99.8	100	100																																			
30	A/blue-winged teal/Guatemala/CIP049H123 61/2014	OP144113	98.3	98.2	89.7	93.8	93.7	93.8	93.8	94.3	93.7	92.1	93.9	93.8	93.8	94.3	93.8	91.3	91.7	91.3	91.2	91.2	91.2	91.3	91.3	100	91.2	99.8	100	100	100																																			
31	A/blue-winged teal/Guatemala/CIP049H123 65/2014	OP144121	98.4	98.2	89.8	93.9	93.8	93.9	93.9	94.3	93.8	92.1	94	93.9	93.9	94.4	93.9	91.4	91.8	91.4	91.3	91.3	91.3	91.4	91.4	100	91.3	99.9	100	100	100	99.9																																			
32	A/blue-winged teal/Guatemala/CIP049H123 75/2014	OP144130	91.6	91.4	89.4	91.6	91.3	91.4	91.4	91.2	91.4	97	91.1	91.6	91.4	91.2	91.4	94.8	95.7	94.8	94.6	94.6	94.7	94.8	94.7	91.3	100	91.2	91.3	91.3	91.3	91.2	91.3																																			
33	A/blue-winged teal/Guatemala/CIP049H123 76/2014	OP144138	94.2	94.2	89.5	97.8	97.6	97.7	97.7	94.4	97.6	91.7	98	97.7	97.5	94.3	97.5	91	91.6	91	91.1	91.1	91	91	91	93.7	90.9	93.6	93.7	93.7	93.7	93.6	93.7	90.9																																			
34	A/blue-winged teal/Guatemala/CIP049H125 14/2015	OP144147	91.8	91.7	89.5	91.8	91.5	91.6	91.6	91.3	91.5	97.7	91.3	91.8	91.5	91.3	91.6	94.8	96.6	94.9	94.8	94.8	94.8	94.8	94.8	91.3	96.1	91.2	91.3	91.3	91.3	91.2	91.3	96.1	91.3																																			
35	A/blue-winged teal/Guatemala/CIP049H125 23/2015	OP144155	91.7	91.6	89.6	91.8	91.5	91.6	91.6	91.3	91.6	97.7	91.3	91.8	91.6	91.3	91.6	94.6	96.7	94.6	94.6	94.6	94.6	94.6	94.6	91.2	96	91.1	91.2	91.2	91.2	91.2	91.3	96	91.2	99.7																																	
36	A/blue-winged teal/Guatemala/CIP049H125 5/2015	OP144163	91.7	91.6	89.5	91.8	91.5	91.6	91.6	91.3	91.6	97.7	91.3	91.8	91.7	91.3	91.7	94.7	96.7	94.7	94.7	94.7	94.7	94.7	94.7	91.2	96	91.2	91.2	91.2	91.2	91.2	91.3	96	91.2	99.7	99.7																															
37	A/blue-winged teal/Guatemala/CIP049H125 10/2015	OP144171	98.3	98.2	89.8	93.8	93.7	93.8	93.8	94.3	93.7	92.1	93.9	93.8	93.8	94.3	93.8	91.4	91.8	91.4	91.4	91.4	91.4	91.4	91.5	99.9	91.4	99.8	99.9	99.9	99.9	99.9	99.9	91.4	93.6	91.3	91.3	91.3																															
38	A/blue-winged teal/Guatemala/CIP049H158 26/2019	OP144179	93.2	93.1	91.2	92.8	92.5	92.5	92.5	92.7	92.5	95.6	92.7	92.8	92.6	92.7	92.5	94.8	95.3	94.8	94.6	94.6	94.7	94.8	94.7	92.7	94.5	92.6	92.7	92.7	92.7	92.7	92.8	94.5	92.3	94.6	94.7	94.7	92.8																													
39	A/blue-winged teal/Guatemala/CIP049H189 08/2019	OP144187	91.3	91.1	89.5	91.4	91.2	91.3	91.3	91.5	91.2	96.1	91.3	91.4	91.2	91.5	91.2	94	95.2	94	93.9	93.9	93.9	94	93.9	91.1	95.2	91.1	91.1	91.1	91.1	91.1	91.2	95.2	90.8	95.1	95	95	95.1	94.2																													
40	A/blue-winged teal/Guatemala/CIP049H189 19/2019	OP144196	91.3	91.1	89.4	91.4	91.1	91.2	91.2	91.4	91.2	96	91.2	91.4	91.2	91.5	91.1	93.9	95.2	93.9	93.8	93.8	93.9	93.9	93.8	91.1	95.1	91.1	91.1	91.1	91.1	91	91.1	95.1	90.7	95	95	95	91.2	94.2	100																													
41	A/Blue winged Teal/Ohio/18OS1695/2018	MN431047	91.7	91.6	89.1	91.7	91.4	91.5	91.5	91.3	91.4	97.5	91.2	91.7	91.4	91.2	91.5	94.2	96.1	94.2	94	94	94.1	94.2	94	91.4	95.7	91.3	91.4	91.4	91.4	91.4	91.4	95.7	90.8	96.2	96.3	96.3	91.4	94.6	94.8	94.8																											
42	A/blue winged teal/Texas/UGA/15 6890/2015	KX024580	91.1	91	89	91.3	91	91.1	91.1	90.7	91	97.4	90.9	91.3	91	90.7	91.1	94.3	96.3	94.3	94.1	94.1	94.2	94.3	94.1	90.6	95.6	90.6	90.6	90.6	90.6	90.6	90.7	95.6	90.8	98.4	98.4	98.4	90.7	94.3	94.5	94.4	96																									
43	A/long tailed duck/Wisconsin/10OS3912/2010	KC110594	92.3	92.1	89.9	92.4	92.1	92.2	92.2	91.8	92.1	98.4	92.1	92.4	92.2	91.8	92.2	95.7	97.2	95.7	95.5	95.5	95.6	95.7	95.5	92	97.4	91.9	92	92	92	92	92.1	97.4	91.9	96.9	96.9	96.9	92.1	95.7	96.3	96.3	96.7	96.6																									
44	A/long tailed duck/Wisconsin/10OS3918/2010	CY133560	92.4	92.2	89.9	92.5	92.1	92.2	92.2	91.8	92.2	98.5	92.1	92.5	92.3	91.8	92.2	95.7	97.2	95.7	95.6	95.6	95.6	95.7	95.6	92.1	97.5	92	92.1	92.1	92.1	92	92.1	97.5	91.9	96.9	97	97	92.2	95.7	96.4	96.3	96.8	96.7	100																									
45	A/long tailed duck/Wisconsin/10OS4225/2010	KC110601	92.3	92.1	89.9	92.4	92.1	92.1	92.1	91.8	92.1	98.4	92.1	92.4	92.2	91.8	92.1	95.7	97.1	95.7	95.6	95.6	95.6	95.7	95.6	92	97.4	91.9	92	92	92	91.9	92	97.4	91.8	96.9	97	97	92.1	95.6	96.3	96.2	96.7	96.8	99.9	99.9																							
46	A/mallard/Wisconsin/10OS3941/2010	CY133273	94.8	94.7	89.9	95.4	95.2	95.3	95.3	94.9	95.2	91.8	95.1	95.4	95.4	95	95.3	91.4	91.5	91.4	91.3	91.3	91.3	91.4	91.3	94.3	91.1	94.2	94.3	94.3	94.3	94.3	94.3	91.1	95	91.2	91.2	91.2	94.3	92.6	90.9	90.9	91.1	90.7	91.8	91.8	91.8																							
47	A/northern shoveler/California/2696/2011	CY146904	98.5	98.4	89.8	94.1	93.9	94	94	94.7	94	92.6	94.3	94.1	94.1	94.6	94	91.8	92.2	91.8	91.7	91.7	91.7	91.8	91.8	88.6	91.8	88.6	88.6	88.6	88.6	88.6	88.7	91.8	93.9	91.8	91.8	91.8	88.6	93.1	91.6	91.5	92	91.2	92.4	92.5	92.4	94.6																			
48	A/Northern_Shoveler/California/D16162172/2016	MK928235	91.3	91.2	89.3	91.3	91	91	91	91	91	97.1	90.9	91.3	91.1	91	91.1	94.2	96.2	94.2	94.1	94.1	94.2	94.2	94.1	90.9	95.4	90.9	90.9	90.9	90.9	90.9	91	95.4	90.9	98.9	99	99	90.9	94.4	94.5	94.4	95.9	98	96.4	96.5	96.5	90.9	91.5																			
49	A/northern shoveler/Mississippi/12OS456/2012	CY167274	89.6	89.6	94	89.2	88.9	89	89	89.1	89	89.9	89.1	89.2	89.2	88.9	89.1	89.2	88.8	89.2	89.2	89.2	89.2	89.2	89.1	89.1	89.2	89	89.1	89.1	89.1	89	89.1	89.2	89.1	89.2	89.4	89.3	89.1	91.1	88.6	88.5	89.3	88.8	89.5	89.5	89.5	89.6	89.3	89.2																	
50	A/northern shoveler/Missouri/10OS4673/2010	CY133388	92.2	92.1	90	92.1	91.9	92	92	91.6	91.9	98.2	91.8	92.1	92	91.6	91.9	95.2	97	95.2	95.1	95.1	95.2	95.1	92.1	97	92.1	92.1	92.1	92.1	92.1	92.2	97	91.6	96.7	96.8	96.8	92.3	95.3	96.1	96.1	96.7	96.4	98.4	98.5	98.4	91.6	92.5	96.3	89.5																
51	A/Northern_shoveler/Missouri/16OS6248/2016	MG279776	92.1	91.9	89.7	91.8	91.4	91.5	91.5	91.3	91.5	96.8	91.3	91.8	91.7	91.2	91.6	94.4	95.7	94.4	94.3	94.3	94.3	94.4	94.4	91.8	96.1	91.7	91.8	91.8	91.8	91.7	91.8	96.1	91.3	95.7	95.8	95.7	91.7	94.5	94.9	94.8	95.7	95.1	97	97	96.9	91.3	92.1	96.3	89.3	96.8															
52	A/white winged scoter/Wisconsin/10OS2922/2010	KC110609	92.3	92.1	89.9	92.4	92.1	92.2	92.2	91.8	92.1	98.4	92.1	92.4	92.2	91.8	92.2	95.7	97.1	95.7	95.5	95.5	95.6	95.7	95.5	92	97.4	91.9	92	92	92	92	92.1	97.4	91.8	96.9	96.9	96.9	92.1	95.6	96.3	96.3	96.7	96.6	99.9	100	99.9	91.8	92.4	96.4	89.5	98.4	97														
53	A/Common Teal/Chany Lake/29/2019	EPI ISL 400267	84.8	84.8	83.7	85.1	84.9	85	85	85	85	84.9	85.3	85.1	85.1	84.9	85.1	84.6	85.2	84.6	84.7	84.7	84.5	84.6	84.6	84.9	84.7	85	84.9	84.9	84.9	84.8	84.9	84.7	85	84.9	84.9	84.8	84.9	85.2	84.8	84.8	85	85	85.1	85.1	85.1	84.6	85.2	85.1	84.1	85.1	85												
54	A/garganey/Ukraine/05839-NAMRU3/2006	EPI ISL 120215	85	85.2	84.2	85.7	85.3	85.4	85.4	85.3	85.4	84.4	85.9	85.7	85.7	85.3	85.7	84.4	84.9	84.4	84.4	84.4	84.3	84.4	84.4	85.2	84.4	85.3	85.2	85.2	85.2	85.2	85.3	84.4	85.5	84.8	84.6	84.6	85.2	85.3	84.5	84.4	84.4	84.8	84.6	84.6	84.6	85.2	85.4	85.1	84.7	84.6	84.7	84.5	94.8							
55	A/goose/Karachi/NARC_13N_969/2014	KX602665	84.3	84.5	83.6	84.4	84.3	84.4	84.4	84.2	84.3	84.1	84.6	84.4	84.4	84.3	84.5	84.1	84.4	84.1	84	84	84	84.1	84	84.6	83.8	84.6	84.6	84.6	84.6	84.5	84.6	83.8	84.4	83.6	83.7	83.8	84.5	85	83.6	83.5	84.2	84.3	84.2	84.2	84.2	83.8	84.7	84.3	83.7	84.2	84.6	84.2	92.2	93.7						
56	A/mallard/Astrakhan/263/1982	CY130101	84.2	84.2	84	84.4	84.3	84.4	84.4	84.6	84.4	84.2	84.1	84.4	84.6	84.5	84.5	84	84.4	84	84	84	83.9	84	84	84.4	84.2	84.5	84.4	84.4	84.4	84.4	84.5	84.2	84.3	84.2	84.2	84.2	84.4	84.7	83.9	83.9	84.2	84.3	84.2	84.2	84.1	84.5	84.3	84.6	84.4	84	84.5	84.1	91.6	92.8	91.4		