

## Hemagglutination inhibition tests of influenza B viruses (Yamagata lineage)-0.5%TRBCs

HI test date:2011/1/27

Strains	Passage History	Sample date	Florida/ 04/06 Egg No.08-1	Sendai- H/114/07 Egg No.08-2	Bangladesh/ 3333/07 Egg No.2	Hubei- Wujiagang/ 158/09 Egg No.2	Wisconsin/ 1/10 Egg No.2	Sakai/ 68/09 Cell No.1	Brisbane/ 60/08 Cell NIID No.4	Remarks
REF.Ag										
B/Florida/04/2006	E2 /E1+1	2006/12/15	640	640	640	320	320	80	<10	CL1
B/Sendai-H/114/2007	E1 +3	2007/01/26	160	320	80	160	80	40	<10	CL2
B/Bangladesh/3333/2007	E4 +2	2007/08/19	320	320	640	160	320	160	<10	CL3
B/Hubei-Wujiagang/158/2009	E2/E2 +1		40	80	80	160	40	80	<10	CL3, N202S
B/Wisconsin/01/2010	E3 +1		20	40	80	80	80	40	<10	CL3, N202S
B/SAKAI/68/2009	MDCK 1 +1	2009/11/18	20	<10	80	40	40	160	<10	CL3, N202S, A146S
B/Brisbane/60/2008	MDCKx/1 +2	2008/08/04	<10	<10	<10	<10	<10	<10	40	Victoria-lineage
TEST.Ag										
B/Hubei-Qiaokou/1340/2010	C 2 +1	2010/10/08	160	80	320	160	320	320	<10	CL3, N202S, N116K
B/Fujian-Fengze/1171/2010	C 2 +1	2010/09/13	160	80	320	80	320	320	<10	CL3, N202S
B/Taiwan/729/2010	MDCK 3 +1	2010/09/13	80	40	320	80	160	320	<10	CL3, N202S, A146S
B/Taiwan/714/2010	MDCK 3 +1	2010/08/23	80	160	160	160	160	160	<10	CL3, N202S
B/MIE/21/2010	MDCK 1 +1	2010/10/21	20	20	160	80	160	160	<10	CL3, N202S, N116K
B/Hubei-Jiangan/1790/2010	C 3 +1	2010/09/25	20	20	80	80	80	160	<10	CL3, N202S, N116K

## Hemagglutination inhibition tests of influenza B viruses (Yamagata lineage)-0.5%TRBCs

TC (1)

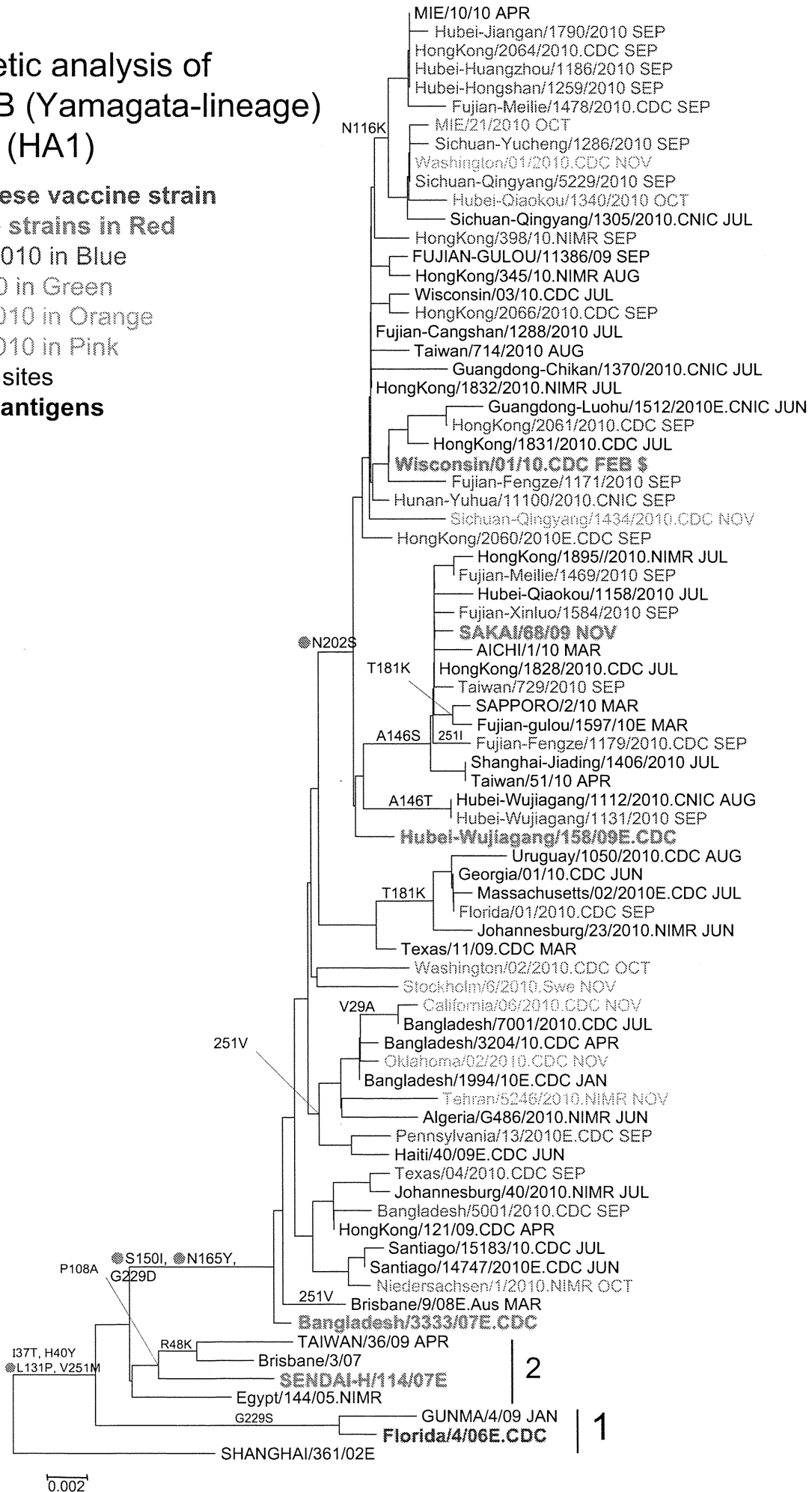
HI test date:2010/12/02

Strains	Passage History	Sample date	Florida/ 04/06 Egg No.08-1	Sendai- H/114/07 Egg No.08-2	Bangladesh/ 3333/07 Egg No.2	Hubei- Wujiagang/ 158/09 Egg No.2	Wisconsin/ 1/10 Egg No.2	Sakai/ 68/09 Cell No.1	Brisbane/ 60/08 Cell NIID No.4	Remarks
REF.Ag										
B/Florida/04/2006	E2 /E1+1	2006/12/15	1280	640	640	320	320	160	< 10	CL1
B/Sendai-H/114/2007	E1 +3	2007/01/26	160	640	80	320	80	40	< 10	CL2
B/Bangladesh/3333/2007	E4 +2	2007/08/19	320	160	640	160	320	160	< 10	CL3
B/Hubei-Wujiagang/158/2009	E2/E2 +1		40	80	80	160	80	80	< 10	CL3, N202S
B/Wisconsin/01/2010	E3 +1		40	40	80	80	80	40	< 10	CL3, N202S
B/SAKAI/68/2009	MDCK 1	2009/11/18	40	10	80	80	80	160	80	CL3, N202S, A146S
B/Brisbane/60/2008	MDCKx/1	2008/08/04	< 10	< 10	< 10	< 10	< 10	< 10	80	Victoria-lineage
TEST.Ag										
B/Hubei-Huangzhou/1186/2010	C 1 +1	2010/09/28	160	20	320	80	80	160	40	CL3, N202S, N116K
B/Hubei-Hongshan/1259/2010	C 2 +1	2010/09/24	80	20	80	80	160	160	40	CL3, N202S, N116K
B/Fujian-Meilie/1469/2010	C 1 +1	2010/09/07	40	20	320	40	80	160	40	CL3, N202S, A146S
B/Fujian-Xinluo/1584/2010	C 2 +1	2010/09/07	40	10	320	40	80	160	40	CL3, N202S, A146S
B/Hubei-Wujiagang/1131/2010	C 2 +1	2010/09/08	<10	10	320	80	320	320	< 10	CL3, N202S, A146S
B/Sichuan-Yucheng/1286/2010	C 2 +1	2010/09/13	< 10	20	160	80	160	160	< 10	CL3, N202S, N116K
B/Sichuan-Qingyang/5229/2010	C 1 +1	2010/09/14	< 10	< 10	80	40	80	80	< 10	CL3, N202S, N116K

# Phylogenetic analysis of influenza B (Yamagata-lineage) HA genes (HA1)

08/09 Japanese vaccine strain  
 HI reference strains in Red  
 September 2010 in Blue  
 October 2010 in Green  
 November 2010 in Orange  
 December 2010 in Pink

●: Antigenic sites  
 \$: Serology antigens



3

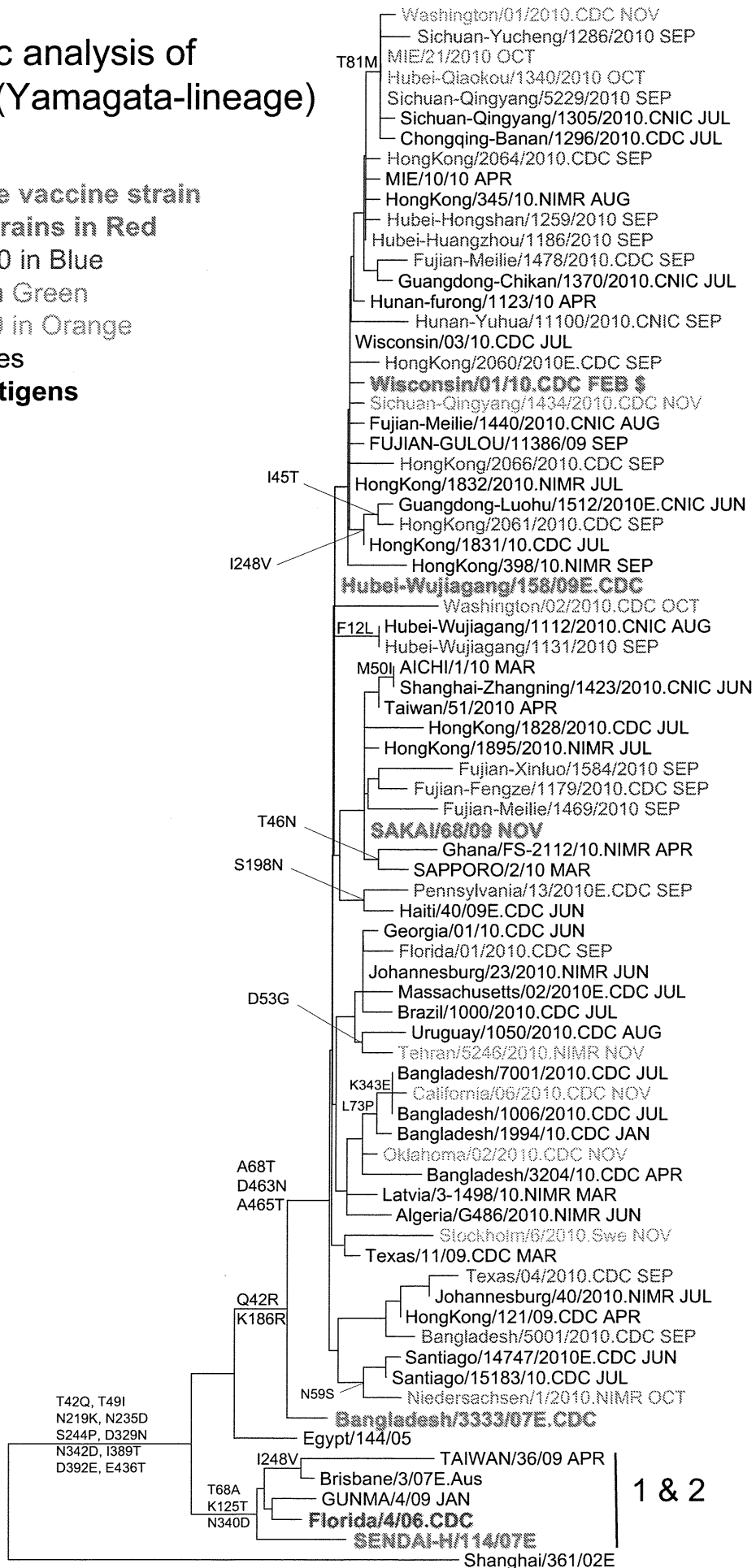
2

1

# Phylogenetic analysis of influenza B (Yamagata-lineage) NA genes

08/09 Japanese vaccine strain  
 HI reference strains in Red  
 September 2010 in Blue  
 October 2010 in Green  
 November 2010 in Orange

●: Antigenic sites  
 \$: Serology antigens



0.002

3

1 & 2

## Influenza B (Yamagata-lineage) HA1 amino acid comparison

B-Yam-AA-consensus (n=66)	1	DRICTGITSSNSPHVVKTATQGEVNVTVGVIPLTPTTKSYFANLKGTRTRGKLCPCDCLNC	60
B/Fujian-Cangshan/1288/2010	1	.....	60
B/Fujian-Fengze/1171/2010	1	.....	60
B/Taiwan/714/2010	1	.....	60
B/Hubei-Qiaokou/1158/2010	1	.....	60
B/Hubei-Wujiagang/1131/2010	1	.....	60
B/Hubei-Huangzhou/1186/2010	1	.....	60
B/Sichuan-Qingyang/5229/2010	1	.....	60
B/Sichuan-Yucheng/1286/2010	1	.....	60
B/MIE/21/2010	1	.....	60
B/Hubei-Jiangan/1790/2010	1	.....	60
Florida/4/06E.CDC	1	.....	60
SENDAIH/114/07E	1	.....	60
Bangladesh/3333/07E.CDC	1	.....	60
HubeiWujiagang/158/09E.CDC	1	.....	60
SAKAI/68/09	1	.....	60
Wisconsin/01/10.CDC	1	.....	60
B-Yam_AG_site (FL:4:06E)	1	-----	3
10_AA	1	-----X-----X-----X-----X-----X-----X-----	6

B-Yam-AA-consensus (n=66)	61	TDLDVALGRPMC VGTTPSAKASILHEVRPVTS GCFPI MHDRTKIRQLPNLLRGYENIRLS	120
B/Fujian-Cangshan/1288/2010	61	.....	120
B/Fujian-Fengze/1171/2010	61	.....	120
B/Taiwan/714/2010	61	.....	120
B/Hubei-Qiaokou/1158/2010	61	.....	120
B/Hubei-Wujiagang/1131/2010	61	.....	120
B/Hubei-Huangzhou/1186/2010	61	.....K....	120
B/Sichuan-Qingyang/5229/2010	61	.....K....	120
B/Sichuan-Yucheng/1286/2010	61	.....K....	120
B/MIE/21/2010	61	.....K....	120
B/Hubei-Jiangan/1790/2010	61	.....K....	120
Florida/4/06E.CDC	61	.....K....	120
SENDAIH/114/07E	61	.....A....	120
Bangladesh/3333/07E.CDC	61	.....	120
HubeiWujiagang/158/09E.CDC	61	.....	120
SAKAI/68/09	61	.....	120
Wisconsin/01/10.CDC	61	.....	120
B-Yam_AG_site (FL:4:06E)	4	-----	10
10_AA	7	-----X-----X-----X-----X-----X-----X-----	12

# Influenza B (Yamagata-lineage) HA1 amino acid comparison

B-Yam-AA-consensus (n=66)	121	TQNVIDAEKAPGGPYRLGTSGSCP NATSKIGFFATMAWAVPKDNYKNATNPLTVEVPYIC	180
B/Fujian-Cangshan/1288/2010	121	.....	180
B/Fujian-Fengze/1171/2010	121	.....	180
B/Taiwan/714/2010	121	.....	180
B/Hubei-Qiaokou/1158/2010	121	.....S.....Q.....	180
B/Hubei-Wujiagang/1131/2010	121	.....T.....	180
B/Hubei-Huangzhou/1186/2010	121	.....	180
B/Sichuan-Qingyang/5229/2010	121	.....	180
B/Sichuan-Yucheng/1286/2010	121	.....	180
B/MIE/21/2010	121	.....	180
B/Hubei-Jiangan/1790/2010	121	.....	180
Florida/4/06E.CDC	121	.....S.....N.....	180
SENDAIH/114/07E	121	.....S.....N.....	180
Bangladesh/3333/07E.CDC	121	.....	180
HubeiWujiagang/158/09E.CDC	121	.....	180
SAKAI/68/09	121	.....S.....	180
Wisconsin/01/10.CDC	121	.....	180
B-Yam_AG_site (FL:4:06E)	11	-----S-----N-----	27
10_AA	13	-----X-----X-----X-----X-----X-----X-----	18

		196 198	
B-Yam-AA-consensus (n=66)	181	TEGEDQITVWGFHSDNKTQMKSLYGDSPQKFTSSANGVTTHYVVSQIGDFPDQTEDGGLP	240
B/Fujian-Cangshan/1288/2010	181	.....	240
B/Fujian-Fengze/1171/2010	181	.....	240
B/Taiwan/714/2010	181	.....	240
B/Hubei-Qiaokou/1158/2010	181	.....	240
B/Hubei-Wujiagang/1131/2010	181	.....	240
B/Hubei-Huangzhou/1186/2010	181	.....	240
B/Sichuan-Qingyang/5229/2010	181	.....	240
B/Sichuan-Yucheng/1286/2010	181	.....	240
B/MIE/21/2010	181	.....K.....	240
B/Hubei-Jiangan/1790/2010	181	.....	240
Florida/4/06E.CDC	181	.....I.....N.....S.....	240
SENDAIH/114/07E	181	.....X.....N.....G.....	240
Bangladesh/3333/07E.CDC	181	.....X.....N.....	240
HubeiWujiagang/158/09E.CDC	181	.....N.....	240
SAKAI/68/09	181	.....	240
Wisconsin/01/10.CDC	181	.....	240
B-Yam_AG_site (FL:4:06E)	28	-----I.....N-----	46
10_AA	19	-----X-----X-----X-----X-----X-----X-----	24

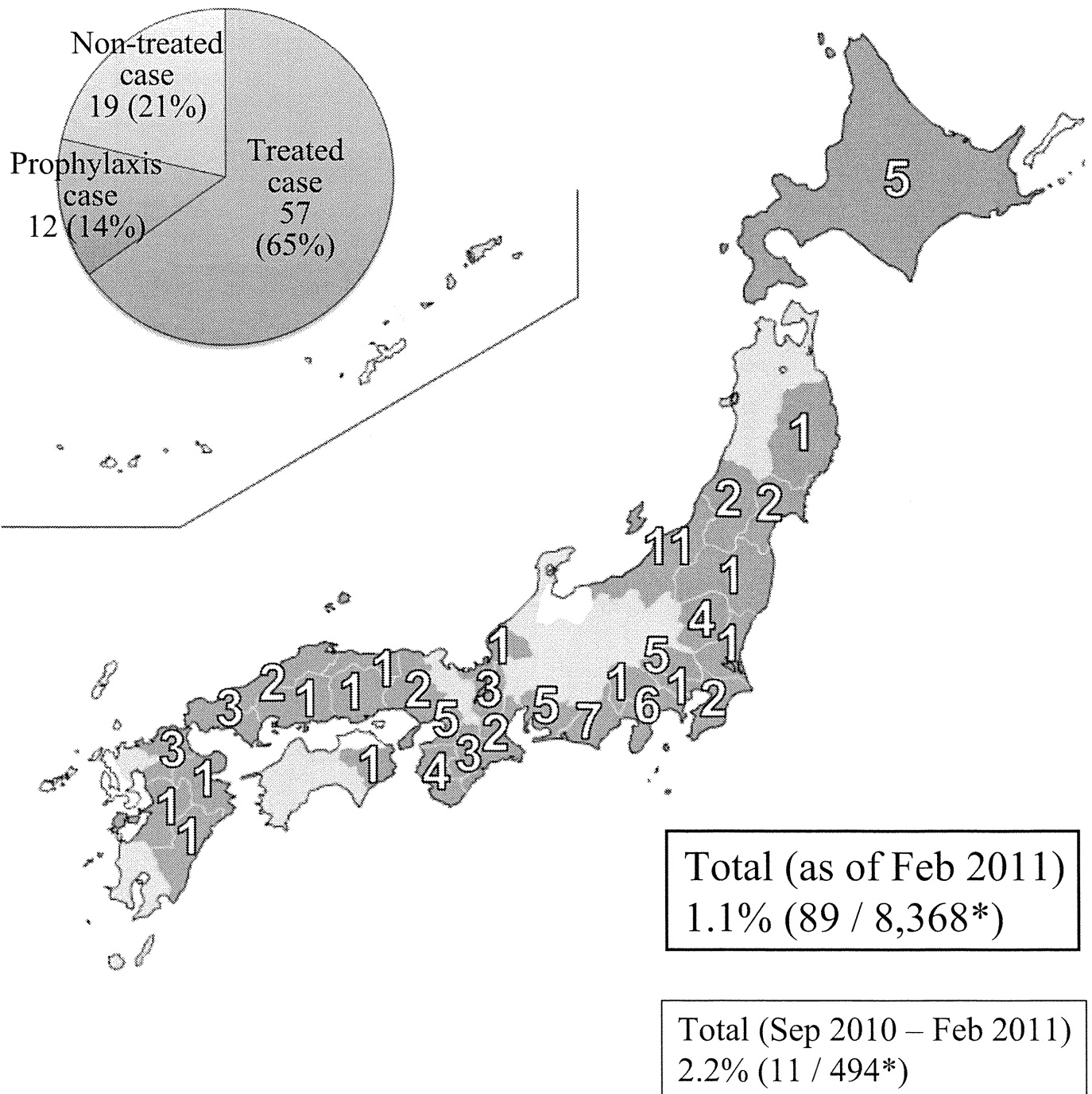
## Influenza B (Yamagata-lineage) HA1 amino acid comparison

B-Yam-AA-consensus (n=66)	241	QSGRIVVDYMMQKPGKTGTIVYQRGVLLPQKVWCASGRSKVIKGSPLIGEADCLHEKYG	300
B/Fujian-Cangshan/1288/2010	241	.....	300
B/Fujian-Fengze/1171/2010	241	.....	300
B/Taiwan/714/2010	241	.....	300
B/Hubei-Qiaokou/1158/2010	241	.....	300
B/Hubei-Wujiagang/1131/2010	241	.....	300
B/Hubei-Huangzhou/1186/2010	241	.....	300
B/Sichuan-Qingyang/5229/2010	241	.....	300
B/Sichuan-Yucheng/1286/2010	241	.....	300
B/MIE/21/2010	241	.....	300
B/Hubei-Jiangan/1790/2010	241	.....	300
Florida/4/06E.CDC	241	.....	300
SENDAIH/114/07E	241	.....	300
Bangladesh/3333/07E.CDC	241	.....	300
HubeiWujiagang/158/09E.CDC	241	.....	300
SAKAI/68/09	241	.....	300
Wisconsin/01/10.CDC	241	.....	300
B-Yam_AG_site (FL:4:06E)	47	-----	51
10_AA	25	-----X-----X-----X-----X-----X-----X	30
		.....	
B-Yam-AA-consensus (n=66)	301	GLNKSHPYYTGEHAKAIGNCPIWVKTPPLKLANGTKYRPPAKLLKER	346
B/Fujian-Cangshan/1288/2010	301	.....	346
B/Fujian-Fengze/1171/2010	301	.....	346
B/Taiwan/714/2010	301	.....	346
B/Hubei-Qiaokou/1158/2010	301	.....	346
B/Hubei-Wujiagang/1131/2010	301	.....	346
B/Hubei-Huangzhou/1186/2010	301	.....	346
B/Sichuan-Qingyang/5229/2010	301	.....	346
B/Sichuan-Yucheng/1286/2010	301	.....	346
B/MIE/21/2010	301	.....	346
B/Hubei-Jiangan/1790/2010	301	.....	346
Florida/4/06E.CDC	301	.....	346
SENDAIH/114/07E	301	.....	346
Bangladesh/3333/07E.CDC	301	.....	346
HubeiWujiagang/158/09E.CDC	301	.....	346
SAKAI/68/09	301	.....	346
Wisconsin/01/10.CDC	301	.....	346
B-Yam_AG_site (FL:4:06E)	52	-----	51
10_AA	31	-----X-----X-----X-----X-----X	35
		.....	

## Antiviral resistance surveillance



# Detection of oseltamivir and peramivir-resistant A/H1N1pdm viruses with H275Y mutation in Japan (As of February 2011)



\*The number of oseltamivir-resistant viruses / The number of H1N1pdm viruses tested

## Detection of neuraminidase inhibitor-resistant influenza viruses in East Asian countries during Sep 2010 – Feb 2011

Country	Viruses tested (n)	A/H1N1pdm			A/H3N2			B		
		Viruses tested (n)	Resistant (%)		Viruses tested (n)	Resistant (%)		Viruses tested (n)	Resistant (%)	
			Oseltamivir Peramivir	Zanamivir Laninamivir		Oseltamivir Peramivir	Zanamivir Laninamivir		Oseltamivir Peramivir	Zanamivir Laninamivir
Japan	577	494	11* (2.2%)	0	65	0	0	18	0	0
China	69	0	0	0	45	0	0	24	0	0
Taiwan	17	5	0	0	12	0	0	0	0	0
Korea	8	0	0	0	0	0	0	8	0	0
Laos	18	0	0	0	5	0	0	13	0	0
Myanmar	11	7	0	0	0	0	0	4	0	0
Mongol	6	0	0	0	6	0	0	0	0	0
<b>Total</b>	<b>706</b>	<b>506</b>	<b>11 (2.2%)</b>	<b>0</b>	<b>133</b>	<b>0</b>	<b>0</b>	<b>67</b>	<b>0</b>	<b>0</b>

\*Of 11 resistant viruses, 3 cases were detected from oseltamivir treated, 1 case was prophylaxis, 1 case was peramivir treated and 6 cases were non-treated.

Viruses were examined by chemiluminescent-based NAstar assay, RT-PCR and/or NA sequencing.

# Influenza A/H5N1 Viruses

# HPAI (H5N1) in Japan, October 2010-February 2011

Data from Ministry of  
Agriculture, Forestry and  
Fisheries,  
as of Feb 7, 2011

**Clade 2.3.2**

## Hokkaido Prefecture

- October 2010,  
Droppings of wild ducks
- January 2011,  
Wild bird (whooper swan, duck)

## Tottori Prefecture

- December 2010,  
Wild bird (tundra swan)

## Toyama Prefecture

- December 2010  
Raised bird (mute swan)

## Shimane Prefecture

- November 2010  
A poultry (layer) farm

## Hyogo Prefecture

- January 2011  
Wild bird

## Fukushima Prefecture

- January 2011  
Wild bird (tufted duck)

- January 2011  
Wild bird (duck)

## Nagano Prefecture

- January 2011  
Wild bird (duck)

## Ohita Prefecture

- February 2011  
A poultry (layer) farm

## Aichi Prefecture

- January 2011  
A poultry (hatchery, layer) farm

## Kagoshima Prefecture

- December 2010  
Wild birds (hooded crane)
- January 2011  
Wild bird (white-naped crane)

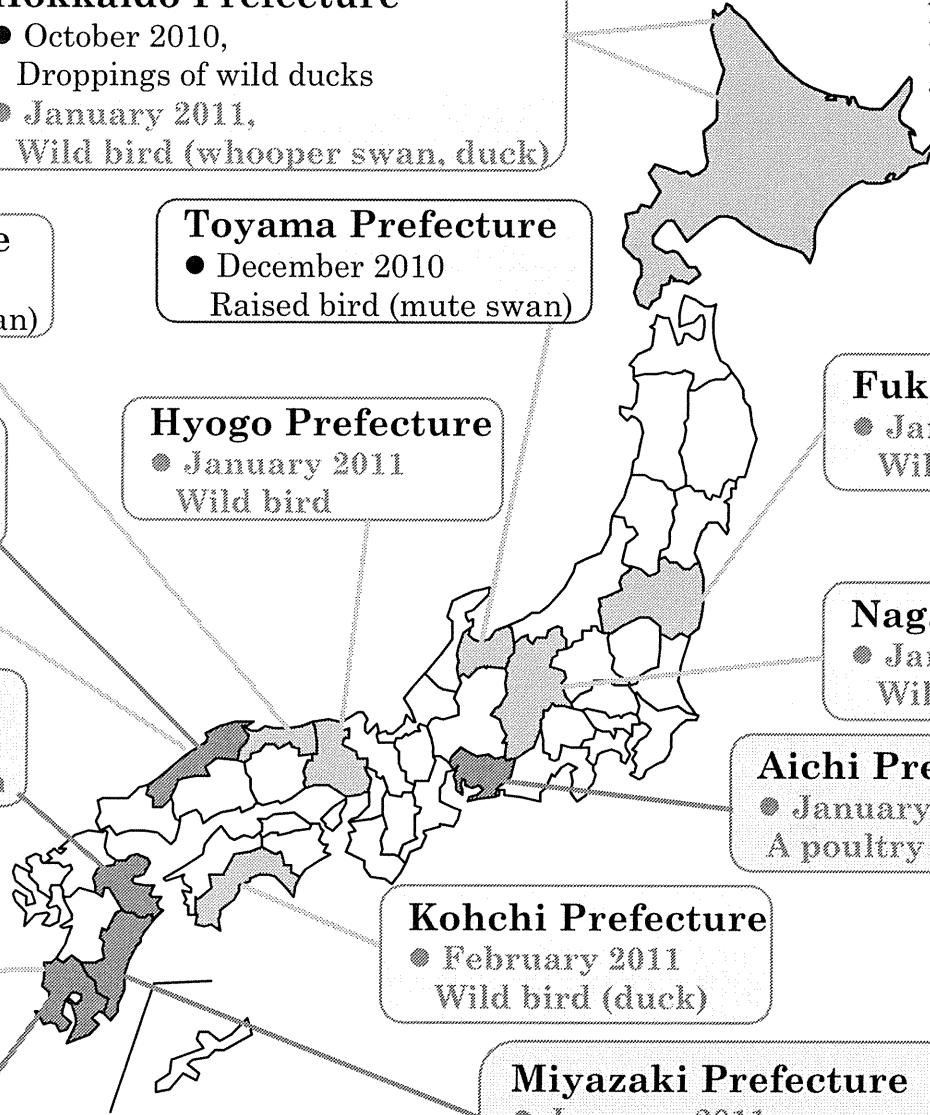
## Kohchi Prefecture

- February 2011  
Wild bird (duck)

- January 2011  
A poultry farm

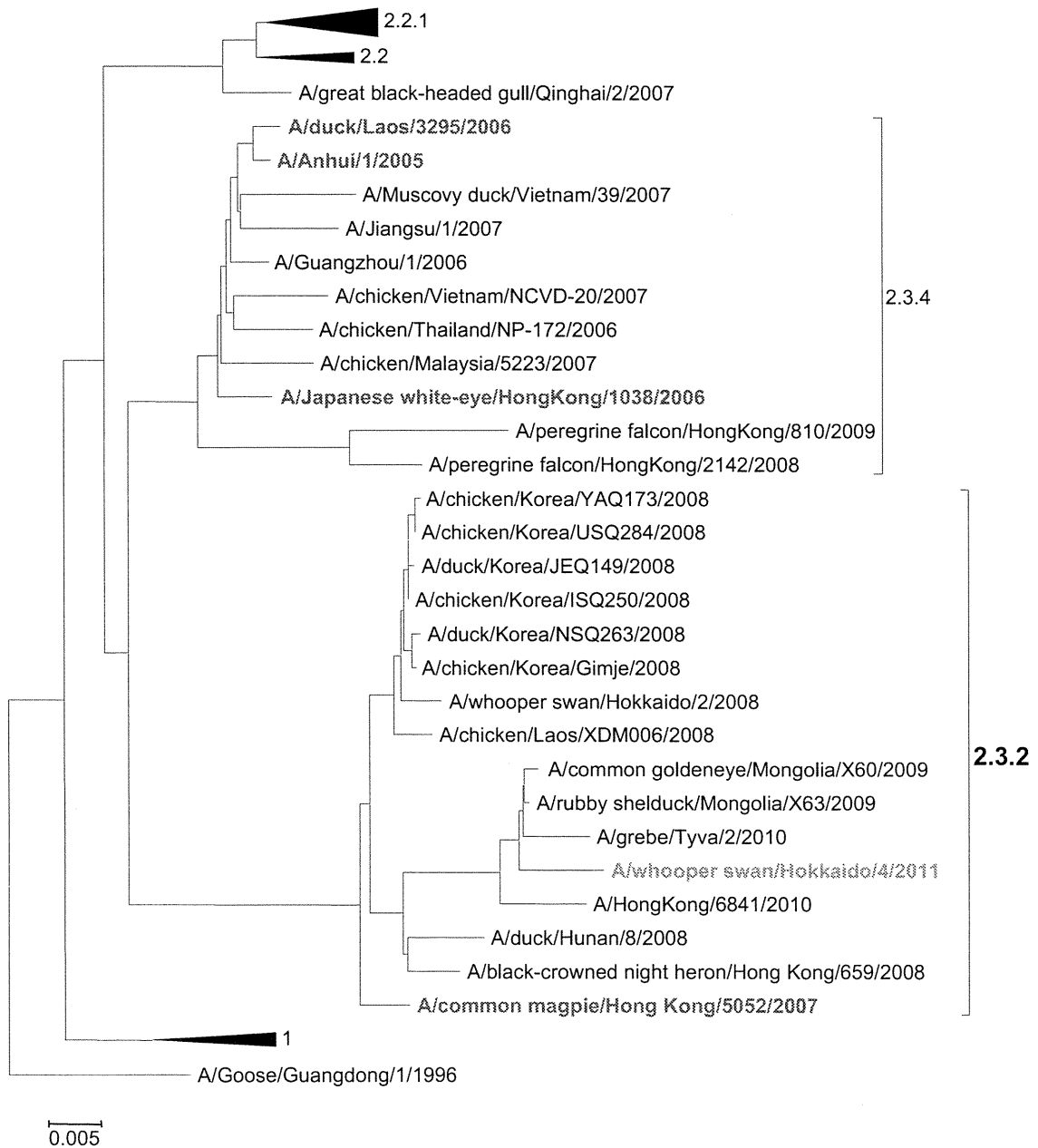
## Miyazaki Prefecture

- January 2011  
Five poultry (hatchery, layer) farms
- February 2011  
Six poultry farms



# Phylogenetic analysis of influenza A (H5) HA genes

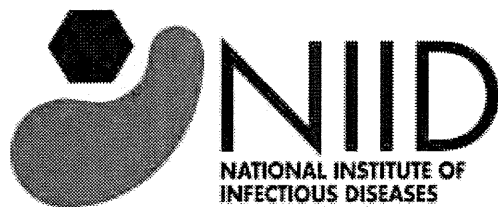
Japanese strain detected in 2011  
Reassortant vaccine viruses



Information for WHO Annual Consultation on  
the Composition of Influenza Vaccine  
in the Northern Hemisphere

February 14-18, 2011, Geneva, Switzerland

Serologic Response to Influenza Virus Vaccines



**WHO Collaborating Center for Reference and Research on Influenza at Laboratory of  
Influenza Virus Surveillance, Center for Influenza Virus Research,**

**National Institute of Infectious Diseases, Tokyo, Japan**

## Serum panel for 10/11 Northern hemisphere human serology

Serum provided by	Population details (yrs)		No. of sera	Vaccine components
WHO, Australia (I. Barr)	<u>Adults</u>		24	A/California/7/2009 X-179A(H1N1)pdm A/Wisconsin/15/2009 X-183(H3N2) B/Brisbane/60/2008
	Age range 23-58	Mean age 41.4		
	<u>Elderly</u>			
	Age range 61-83	Mean age 67.6	24	
NIBSC,UK (R. Newman)	<u>Adults</u>		24	A/California/7/2009 X-179A(H1N1)pdm A/Victoria/210/2009 X-187(H3N2) B/Brisbane/60/2008
	Age range	Mean age 37.2		
	<u>Elderly</u>			
	Age range	Mean age 66.7	23	
Niigata Univ., Japan (R. Saito)	<u>Adults</u>		24	A/California/7/2009 X-179A(H1N1)pdm A/Victoria/210/2009 X-187(H3N2) B/Brisbane/60/2008
	Age range 20-58	Mean age 38.1		
	<u>Elderly</u>			
	Age range 62-100	Mean age 82.3	24	
CBER, USA (Z. Ye)	<u>Adults</u>		24	A/California/7/2009 X-179A(H1N1)pdm A/Victoria/210/2009 X-187(H3N2) B/Brisbane/60/2008
	Age range	Mean age		
	<u>Elderly</u>			
	Age range	Mean age	24	
CDC, China (D. Wang)	<u>Adults</u>		30	A/California/7/2009(H1N1)pdm-like A/Victoria/210/2009(H3N2)-like B/Brisbane/60/2008
	Age range 19-59	Mean age 42.0		
	<u>Elderly</u>			
	Age range 60-88	Mean age 70.7	30	

Antigen panel for 2010/11 Northern hemisphere human serology in Japan

Type/Subtypes	Viruses	Passage	Remarks
H1N1pdm	<b>A/California/7/2009</b>	<b>E2+3</b>	<b>Wild type, Common</b>
	A/Christchurch/16/2010	E2+1	N125D, D94N, V250A
H3N2	<b>A/Victoria/210/2009 X-187</b>	<b>E7/E2+1</b>	<b>Vaccine, Common</b>
	A/Kobe/357/2010	MDCK 1+2	Broad reactor to all ref sera, Perth/16 clade
	A/Okinawa/72/2010	MDCK 1+2	4-fold low to Perth/16, Vic/208 clade, recent subclade (53N, 94Y, 230V)
	A/Yokohama/96/2010	MDCK 2+2	Perth/16-like, Vic/208 clade, recent subclade (53N, 94Y, 230V)
	A/Brisbane/11/2010	E4+2	Perth/16-like, Vic/208 clade, candidate of vaccine production strain
	A/Rhode Island/1/2010	E3+1	<b>Common</b> , Vic/208 clade, T48, K92R subclade, Perth/16-like
B-Vic	<b>B/Brisbane/60/2008</b>	<b>E4+1</b>	<b>Vaccine, Common</b>
	B/Hiroshima/9/2010	E1+1	<b>Common</b> , Bris/60-like, recent subclade (L58P)
	B/Hiroshima/9/2010	MDCK 1+1	Bris/60-like, recent subclade (L58P)
B-Yam	B/Wisconsin/1/2010	E3+1	<b>Common</b> , a candidate of vaccine production strain



## **Supplement data by NIID**



- 1. Antigenic analysis of influenza A/H3N2 viruses**
- 2. Update of influenza A/H5N1 virus**
- 3. Serologic Response to Influenza Virus Vaccines**

## Hemagglutination inhibition tests of influenza A/H3 viruses-1%Guinea Pig RBCs

HI test date:2011/2/10

Strains	Passage History	Sample date	Brisbane-lineage	Perth16 group				Victoria208 group			HK2000 group	Remarks	
			Uruguay/716/07 Egg No.2	Victoria/210/09 Egg No.1	Victoria/210/09 (X-187) Egg No.1	Perth/16/09 Egg No.2	Niigata/403/09 Cell No.1	Brisbane/11/10 Egg No.1	Brisbane/11/10 (X-197) Egg No.1	Shizuoka/736/09 Cell No.2	Hunan-beihu/1313/09 Cell No.1	HA	NA 151
REF.Ag													
A/Uruguay/716/2007	SpfCk1E3 +3	2007/06/21	1280	40	10	40	20	160	160	80	160		D
A/Victoria/210/2009	E2 +2	2009/06/02	< 10	640	640	160	320	160	160	160	80	P*, I260M	D
A/Victoria/210/2009 (X-187)	E7/E2+1		10	1280	2560	320	640	320	320	160	40	P*, I260M	D
A/Perth/16/2009	E3 +2		< 10	320	80	160	160	80	80	80	20	P*	D
A/NIIGATA/403/2009	MDCK 2 +2	2009/03/12	20	640	160	320	320	160	160	160	80	P*	D
A/Brisbane/11/2010	E4 +2		10	320	40	80	160	320	320	160	40	V*, N312S	D
A/Brisbane/11/2010 (X-197)	E7 +2		20	320	80	160	160	640	640	320	40	V*, N312S	
A/SHIZUOKA/736/2009	MDCK 1 +3	2009/05/23	40	1280	160	320	320	160	160	320	160	V*	D
A/Hunan-beihu/1313/2009	C 3 +1	2009/05/07	80	20	10	20	20	20	20	10	320	HK/2000 CL	
TEST.Ag													
A/YOKOHAMA/91/2010	MDCK 2 +2	2010/11/26	40	1280	320	320	640	640	640	640	320	V*, N312S	D
A/YAMANASHI/195/2010	MDCK 1 +2	2010/10/23	10	1280	320	640	640	640	320	320	40	P*, I260M, P162S	
A/SAKAI/36/2010	MDCK 2 +1	2010/11/06	20	1280	320	640	640	320	320	320	40	P*, I260M, P162S	
A/SHIMANE/69/2010	MDCK 1 +2	2010/12/06	< 10	640	320	320	640	320	320	320	20	P*, I260M, P162S	D
A/Shanghai-Baoshan/1607/2010	C 2 +1	2010/10/07	20	640	160	320	320	160	160	160	40	P*	
A/SAPPORO/110/2010	MDCK 1 +1	2010/12/09	10	640	160	320	320	640	320	160	80	V*, N312S	D
A/Ulaanbaatar/3805/2010	MDCK 2 +2	2010/12/02	20	640	80	160	160	160	160	160	80	V*, (1)*	
A/Incheon/2384/2010	MDCK 2 +1	2010/12/20	10	640	80	320	320	160	160	80	80	P*, I260M, P162S	
A/NIIGATA-C/1/2011	MDCK 1 +1	2011/01/09	< 10	640	80	320	320	160	160	160	40	P*, I260M, P162S	D
A/EHIME/39/2010	MDCK 1 +1	2010/11/01	< 10	640	80	320	320	160	160	80	20	P*, I260M, P162S	
A/KOBE/419/2010	MDCK 1 +2	2010/12/20	20	320	80	80	160	160	160	160	80	V*, N312S	D
A/FUKUSHIMA/129/2010	MDCK 2 +1	2010/11/29	10	320	80	80	80	160	160	80	80	V*, (1)*	
A/HIROSHIMA/56/2010	MDCK 2 +1	2010/12/22	< 10	320	80	160	160	160	160	80	20	P*, I260M, P162S	D
A/KUMAMOTO/40/2010	MDCK 2 +1	2010/12/13	20	320	40	160	80	160	160	80	40	V*, N312S	D/N
A/Laos/11043/2010	MDCK 3 +1	2010/10/19	10	160	40	80	80	80	80	40	80	V*, (1)*, R208K**	

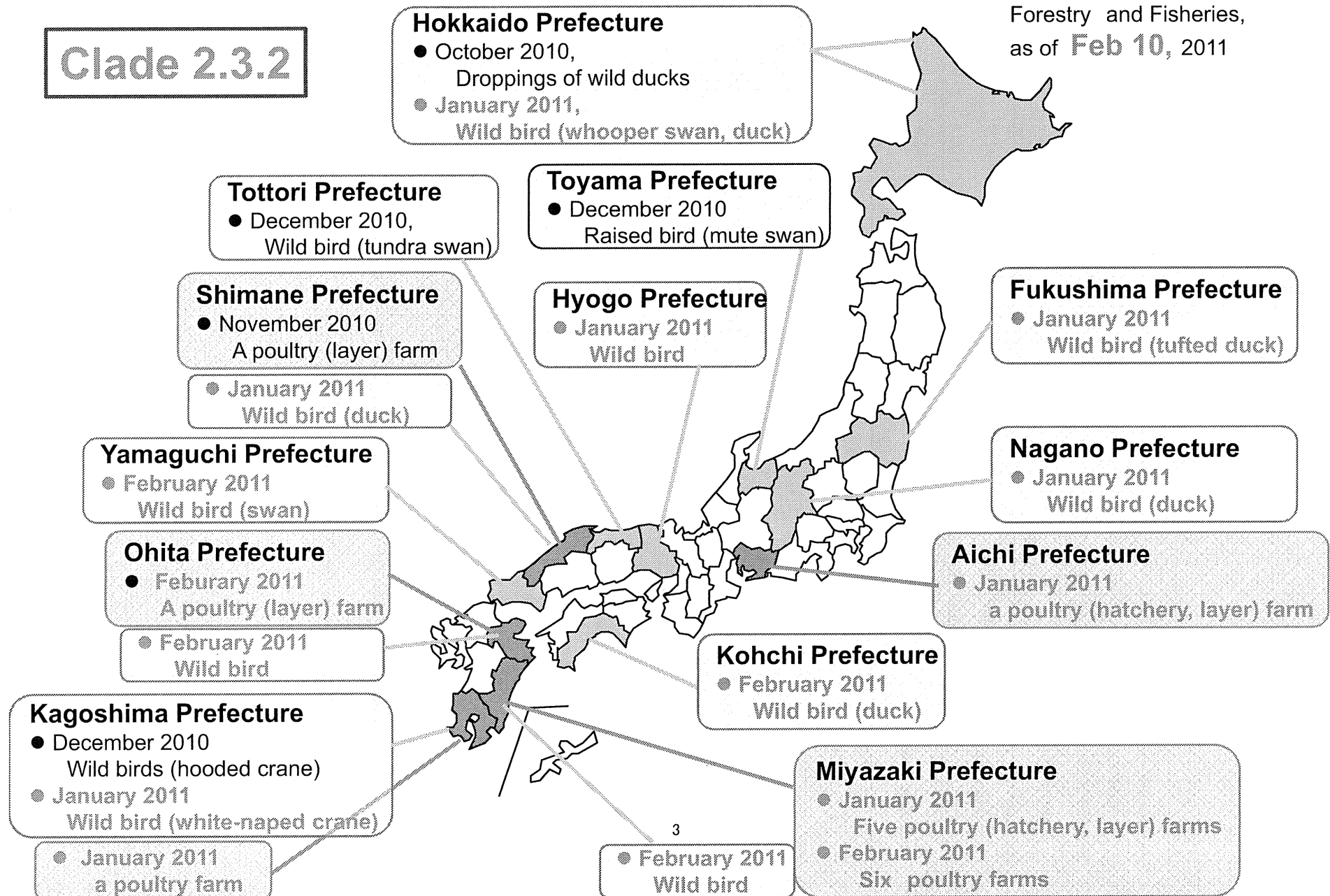
\* P: Perth/16 CL, V: Vic/208 CL, (1): D53N, H94Y, I230V, E280A

\*\* : Antigenic site

# H5N1 (HPAI) in Japan, October 2010-February 2011

Data from Ministry of Agriculture, Forestry and Fisheries, as of Feb 10, 2011

**Clade 2.3.2**



### HI antibody response to H1N1pdm viruses

SAMPLE	Antigens	PASSAGE HISTORY	GMT		(% $\geq 40$ )		% 4-FOLD RISE	post vacc GMT reduction (%)
			PRE	POST	PRE	POST		
Australia Adult	A/California/7/2009*	E2+3	18.3	77.7	41.7	91.7	54.2	
	A/Christchurch/16/2010	E2+1	20.6	69.2	41.7	79.2	45.8	11
E.U Adult	A/California/7/2009	E2+3	7.3	160.0	8.3	95.8	91.7	
	A/Christchurch/16/2010	E2+1	8.7	226.3	12.5	100.0	95.8	0
Japan Adult	A/California/7/2009	E2+3	8.7	36.7	4.2	62.5	62.5	
	A/Christchurch/16/2010	E2+1	12.6	58.2	29.2	70.8	58.3	0
U.S. Adult	A/California/7/2009	E2+3	7.9	138.5	12.5	91.7	91.7	
	A/Christchurch/16/2010	E2+1	12.2	179.6	29.2	91.7	91.7	0
China Adult	A/California/7/2009	E2+3	7.9	32.5	10.0	56.7	66.7	
	A/Christchurch/16/2010	E2+1	10.7	66.5	20.0	76.7	83.3	0
Australia Elderly	A/California/7/2009	E2+3	20.6	44.9	41.7	75.0	29.2	
	A/Christchurch/16/2010	E2+1	27.5	63.5	54.2	83.3	33.3	0
E.U Elderly	A/California/7/2009	E2+3	7.6	45.1	8.7	60.9	69.6	
	A/Christchurch/16/2010	E2+1	10.6	66.8	17.4	60.9	78.3	0
Japan Elderly	A/California/7/2009	E2+3	7.7	24.5	8.3	41.7	58.3	
	A/Christchurch/16/2010	E2+1	13.3	50.4	25.0	75.0	54.2	0
U.S. Elderly	A/California/7/2009	E2+3	6.7	43.6	4.2	66.7	62.5	
	A/Christchurch/16/2010	E2+1	10.3	95.1	12.5	75.0	66.7	0
China Elderly	A/California/7/2009	E2+3	6.7	37.2	3.4	58.6	65.5	
	A/Christchurch/16/2010	E2+1	8.7	67.7	13.8	58.6	69.0	0

\*) HI tests were done at different day, Sept 2010