



SURVEILLANCE REPORT

Community Network of Reference Laboratories (CNRL) for Human Influenza in Europe

Influenza virus characterisation

Summary for Europe, August 2010

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Since the July 2010 report ([click here for the report](#)), three ECDC-affiliated countries (the UK, Sweden and France) have sent samples to the WHO CC in London (Table 1). These were composed of H1N1 pandemic viruses, H3N2 viruses and influenza B viruses (Victoria-lineage).

All pandemic H1N1 viruses received from the ECDC-affiliated countries since the July report were antigenically similar to the vaccine strain A/California/7/2009 in HI tests. Genetic analysis of the HA and the NA genes of representative viruses confirmed that the viruses remain closely related genetically to the vaccine virus and the prototype virus A/California/4/2009.

Two H3N2 viruses from Sweden were propagated. The agglutination of guinea pig red cells by these viruses was inhibited by oseltamivir which made the interpretation of antigenic analysis by HI assay uncertain. Genetically, the HA gene sequence of these viruses clustered within the Victoria/208 clade of Perth/16-like viruses. The NA gene of these viruses clustered with an emerging sub-clade of Victoria/208 viruses.

The Victoria-lineage influenza B viruses tested from France, Sweden and the UK were generally similar genetically and antigenically to other Victoria-lineage influenza B viruses currently being isolated around the world and the majority were similar to the vaccine virus B/Brisbane/60/2008 (Table 2).

Table 1: Summary of specimens received in May, June, July and August, collected since February 2010.

Collection Month	Viruses received									
	Pandemic A(H1N1)		H3		B-Unknown lineage		B-Victoria lineage		B-Yamagata lineage	
Country	Number received	Number grown	Number received	Number grown	Number received	Number grown	Number received	Number grown	Number received	Number grown
FEBRUARY										
France	2	2								
Italy							1	1		
Latvia	3	2								
Norway	6	5					1	1		
Sweden							1	1		
MARCH										
France							2	2		
Italy							8	8		
Latvia									4	2
Norway	2	1			2	0	1	1		
Slovakia	6	3								
Sweden							1	1		
United Kingdom	2	2					3	3		
APRIL										
France							1	1		
Italy							2	2		
Latvia									1	0
Netherlands					1	0*				
Norway	1	1			2	0	1	1		
Slovakia	6	3								
Sweden	1	1	2	2			2	1		
United Kingdom	2	2								
MAY										
France							1	1		
Spain							3	0*		
Sweden	1	1								
United Kingdom	2	2					1	1		
JUNE										
France					1	0	1	1		
Spain							3	0*		
United Kingdom			1	0						
JULY										
Spain							1	0*		
Total	34	25	3	2	6		34	26	5	2

* viruses are in culture.

Table 2: Representative examples of recent antigenic analyses of influenza B (Victoria lineage) viruses.

Viruses	Collection date	Passage History	Haemagglutination inhibition titre ¹							
			Post infection ferret antisera							
			B/Shan ² 7/97	B/Mal 2506/04 F28/05	B/Vic 304/06 F16/06	B/Eng 393/08 F31/08	B/Bris 60/08 F2/09	B/Paris 1762/08 F11/09	B/Mad 7002/09 F2/10	B/HK 514/09 F3/10
REFERENCE VIRUSES										
B/Shandong/7/97		Ex E1	2560	320	160	20	<	<	<	<
B/Malaysia/2506/2004	2004-12-06	E7	1280	640	320	40	10	<	<	<
B/Victoria/304/2006	2006-06-06	E2 E4	2560	640	320	40	40	<	<	<
B/England/393/2008	2008-08-29	E6	1280	640	160	320	160	640	80	40
B/Brisbane/60/2008	2008-08-04	E7	640	160	160	160	160	160	80	80
B/Paris/1762/2008	2009-02-09	C2 SIAT2	1280	320	<	<	80	640	320	640
B/Madagascar/7002/2009	2009-08-31	MDCK1 SIAT2, MDCK3	1280	40	<	<	80	160	640	640
B/Hong Kong/514/2009	2009-10-11	MDCK1 MDCK4	640	40	<	<	80	640	640	640
TEST VIRUSES										
B/Norway/198/2010	2010-02-04	MDCK2 MDCK1	640	160	160	80	40	80	160	160
B/Stockholm/2/2010	2010-02-23	C2 MDCK1	640	20	<	<	80	160	320	320
B/England/27/2010	2010-03-05	S1 MDCK1	640	20	<	<	80	160	640	320
B/England/56/2010	2010-03-25	S1 MDCK1	640	10	<	<	40	80	320	160
B/England/57/2010	2010-03-25	S1 MDCK1	640	10	<	<	<	80	320	160
B/Stockholm/3/2010	2010-03-29	C0 MDCK1	1280	20	<	<	40	160	160	320
B/Stockholm/5/2010	2010-04-09	C0 MDCK1	640	10	<	<	40	80	80	160
B/Norway/459/2010	2010-04-22	MDCK1 MDCK1	1280	20	<	10	80	160	320	320
B/England/63/2010	2010-05-02	MDCK1 MDCK1	640	10	<	<	80	<	<	<
B/Moscow/18/2010	2010-05-24	C3 MDCK1	640	40	160	80	80	80	160	320

1. < = <10; 2. hyperimmune sheep serum

Vaccine strain