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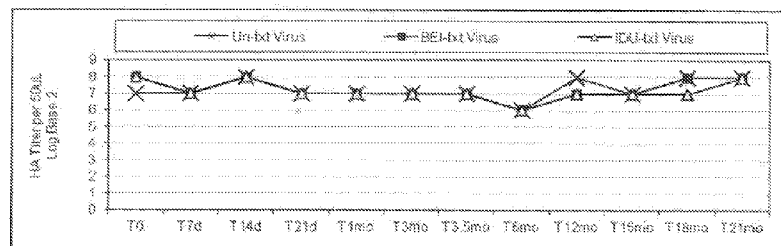
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(54) Title: INACTIVATED SWINE FLU VIRUS AND METHODS OF PREPARING IT

Figure 1: Hemagglutination Bio-Activity of H1N1 Isolate Stored at 2-7°C



(57) Abstract: The present invention is directed at a composition comprising a live swine flu virus having an infectious component and a plurality of surface antigens in contact with a formaldehyde donor agent having a molecular weight that is less than about 400 g/mol. Preferably, the formaldehyde donor agent is selected from a non-crosslinking chemical fixative that contains urea.

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
INV. C12N7/06 A61K39/145
ADD.
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B. FIELDS SEARCHED
Minimum documentation searched (classification system followed by classification symbols)
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, BIOSIS, CHEM ABS Data, EMBASE, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P	US 2011/110975 A1 (GRUNKEMEYER JAMES A ET AL) 12 May 2011 (2011-05-12) cited in the application the whole document paragraph [0034]; claims 1-20 -----	1-20
Y	WO 98/02740 A1 (STRECK LAB) 22 January 1998 (1998-01-22) cited in the application page 8, line 20 page 9, line 30 - line 34 -----	1-20
Y	WO 2006/083286 A2 (SINAI SCHOOL MEDICINE) 10 August 2006 (2006-08-10) paragraph [0148] -----	1-20
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Further documents are listed in the continuation of Box C.

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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Mandl, Birgit

INTERNATIONAL SEARCH REPORT

International application No
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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>DU N ET AL: "Generation and evaluation of the trivalent inactivated reassortant vaccine using human, avian, and swine influenza A viruses", VACCINE, ELSEVIER LTD, GB, vol. 26, no. 23, 2 June 2008 (2008-06-02), pages 2912-2918, XP022666966, ISSN: 0264-410X, DOI: 10.1016/J.VACCINE.2008.03.048 [retrieved on 2008-04-11] abstract page 2914, left-hand column, paragraph 2</p> <p style="text-align: center;">-----</p>	1-20
A	<p>WO 2008/157203 A2 (WYETH CORP) 24 December 2008 (2008-12-24) example 2</p> <p style="text-align: center;">-----</p>	1-20
A	<p>VINCENT A L ET AL: "Efficacy of inactivated swine influenza virus vaccines against the 2009 A/H1N1 influenza virus in pigs", VACCINE, vol. 28, no. 15, 24 March 2010 (2010-03-24), pages 2782-2787, XP026946263, ISSN: 0264-410X, DOI: 10.1016/J.VACCINE.2010.01.049 [retrieved on 2010-02-02] abstract</p> <p style="text-align: center;">-----</p>	1-20

INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Publication date	Patent family member(s)	Publication date
US 2011110975	A1	12-05-2011	NONE	

WO 9802740	A1	22-01-1998	AU 3717197 A	09-02-1998
			US 5849517 A	15-12-1998
			WO 9802740 A1	22-01-1998

WO 2006083286	A2	10-08-2006	BR PI0511776 A	15-01-2008
			CA 2610632 A1	10-08-2006
			CN 1993140 A	04-07-2007
			CN 102727880 A	17-10-2012
			EP 1773384 A2	18-04-2007
			EP 2497492 A1	12-09-2012
			US 2009010962 A1	08-01-2009
			WO 2006083286 A2	10-08-2006

WO 2008157203	A2	24-12-2008	NONE	
