Availability of four new candidate reassortant vaccine viruses for pandemic (H1N1) 2009 virus vaccine development

22 July 2009

IDCDC-RG18, IDCDC-RG20, IDCDC-RG22 and NIBRG-122

Four new candidate reassortant vaccine viruses for pandemic (H1N1) 2009 vaccine development are available for distribution.

The WHO Collaborating Centre for Surveillance, Epidemiology and Control of Influenza in the Centers for Disease Control and Prevention (CDC), Atlanta, USA, has developed the three reassortant viruses using reverse genetics technology:

- IDCDC-RG18 was developed from the haemagglutinin (HA) of an A/Texas/5/2009 (H1N1)v virus and the neuraminidase (NA) of an A/New York/18/2009(H1N1)v virus with A/Puerto Rico/8/1934(H1N1) virus as the backbone;
- IDCDC-RG20 was developed from the HA and NA of an A/Texas/5/2009 (H1N1)v virus with A/Puerto Rico/8/1934(H1N1) virus as the backbone; and
- IDCDC-RG22 was developed from the HA and NA of an A/New York/18/2009(H1N1)v virus with A/Puerto Rico/8/1934(H1N1) virus as the backbone.

The WHO Essential Regulatory Laboratory at the National Institute for Biological Standards and Control (NIBSC), UK, using reverse genetics technology, has developed a reassortant virus NIBRG-122 from the HA and NA of an A/England/195/2009(H1N1)v virus with PR8 as the backbone.

Antigenic and genetic analyses completed so far in the WHO Collaborating Centre in CDC, USA and NIBSC, UK indicate that the above four reassortant viruses meet the specifications of the recent WHO recommendation on viruses to be used in vaccine development.[1]

HA and NA gene sequences of the A/Texas/5/2009 (H1N1)v, A/New York/18/2009 (H1N1)v and A/England/195/2009(H1N1)v viruses can be found on the public web site of GenBank via the following links:

HA sequence of A/Texas/5/2009(H1N1)v
http://www.ncbi.nlm.nih.gov/nuccore/237780575?ordinalpos=1&itool=EntrezSystem2.PEntrez.Sequence.Sequence_ResultsPanel.Sequence_RVDocSum

NA sequence of A/Texas/5/2009(H1N1)v
http://www.ncbi.nlm.nih.gov/nuccore/227831796?ordinalpos=1&itool=EntrezSystem2.PEntrez.Sequence.Sequence_ResultsPanel.Sequence_RVDocSum

HA sequence of A/New York/18/2009(H1N1)v
http://www.ncbi.nlm.nih.gov/nuccore/229396398?ordinalpos=1&itool=EntrezSystem2.PEntrez.Sequence.Sequence_ResultsPanel.Sequence_RVDocSum

NA sequence of A/New York/18/2009(H1N1)v
http://www.ncbi.nlm.nih.gov/nuccore/229396388?ordinalpos=1&itool=EntrezSystem2.PEntrez.Sequence.Sequence_ResultsPanel.Sequence_RVDocSum

[1] http://www.who.int/csr/resources/publications/swineflu/vaccine_recommendations/en/index.html.

HA sequence of A/England/195/2009(H1N1)v

http://www.ncbi.nlm.nih.gov/nuccore/237689564?ordinalpos=1&itool=EntrezSystem2.PEntrez.Sequence.Sequence_ResultsPanel.Sequence_RVDocSum

NA sequence of A/England/195/2009(H1N1)v

http://www.ncbi.nlm.nih.gov/nuccore/237689559?ordinalpos=1&itool=EntrezSystem2.PEntrez.Sequence.Sequence_ResultsPanel.Sequence_RVDocSum

Institutions, companies and other parties interested in receiving these candidate vaccine viruses for the purpose of developing pandemic (H1N1) 2009 vaccines should contact the WHO Global Influenza Program at GISN@who.int or at the address below:

IDCDC-RG18, IDCDC-RG20 and IDCDC-RG22 are available from:

WHO Collaborating Centre for Surveillance, Epidemiology and Control of Influenza
Centers for Disease Control and Prevention, Influenza Branch
1600 Clifton Road, G16, Atlanta, Georgia 30333, United States of America
Fax:+1 404 639 0080
E-mail: rdonis@cdc.gov
http://www.cdc.gov/flu

NIBRG-122 is available from:

Division of Virology
National Institute for Biological Standards and Control
Blanche Lane, South Mimms, Potters Bar
Hertfordshire, EN6 3QG, United Kingdom
E-mail:standards@nibsc.hpa.org.uk
http://www.nibsc.ac.uk/flu_site/viruses_reagents.html

Biocontainment requirement for handling these four candidate reassortant vaccine viruses

These candidate reassortant vaccine viruses contain infectious materials and should be handled only in appropriate containment facilities. As these four candidate reassortant vaccine viruses have 6:2 gene constellation[2], similar to donor viruses previously tested in ferrets with satisfactory results[3,4] and with expected gene sequences, ferret safety testing for these reassortant vaccine viruses are not required. Vaccine production using these four candidate reassortant viruses may proceed at BSL-2 enhanced level using fully trained and competent staff in accordance with national safety guidelines, as described in WHO Technical Report Series No. 941.[5] Recipient laboratories must accept full responsibility for the use and disposal of all materials.

[2] The reassortant viruses possess the HA and NA from the mentioned A/California/7/2009 (H1N1)-like viruses and six internal genes (M, NS, NP, PA, PB1 and PB2) from A/Puerto Rico/8/1934(H1N1) virus

[3] http://www.who.int/csr/resources/publications/swineflu/biocontainment/en/index.html

[4] http://www.who.int/csr/resources/publications/swineflu/ivr_153/en/index.html

[5] http://www.who.int/biologicals/publications/trs/areas/vaccines/influenza/H1N1_vaccine_production_biosafety_SHOC.27May2009.pdf