Kilbourne F107: A/NWS/1934 (HA) x A/Rockefeller Institute/5/1957 (NA) x A/Port Chalmers/1/1973 x A/Puerto Rico/8/1934 (H1N2), Reassortant/Mutant X-29LT

Catalog No. NR-3544

Derived from NIAID Catalog No. V-331-0E5208

For research use only. Not for human use.

Contributor:

National Institutes of Allergy and Infectious Diseases (NIAID), National Institutes of Health (NIH)

Manufacturer:

BEI Resources

Product Description:

Virus Classification: *Orthomyxoviridae*, *Influenzavirus A*

Species: Influenza A virus

Reassortant/Mutant: A/NWS/1934 (HA) x A/Rockefeller Institute/5/1957 x A/Puerto Rico/8/1934 (H1N2) (Kilbourne F107; X-29LT)[1-3]

Origin: Mutation of X-29L (H1N2) during reassortment with X-41 (H3N2)

Comments: NR-3544 arose by mutation of the H1 hemagglutinin (HA) gene of X-29L (Kilbourne F106; BEI Resources NR-3543) during its reasortment with X-41 (Kilbourne F118; BEI Resources NR-3575) to yield a trypsin sensitive virus. This virus undergoes rapid and selective destruction of hemagglutinin on the virion surface upon treatment with trypsin.[1,4]

The derivation of NR-3544 has been described in detail.[4] Briefly, X-29L is a large plaque H1N2 mutant that arose during reassortment between X-12 (H1N2) (Kilbourne F82; BEI Resources NR-3545) and X-27 (H2N1) (Kilbourne F104; BEI Resources NR-3619).[5] X-12 and X-27 are reciprocal (HA, NA) reassortants of A/Rockefeller Institute/5/1957 (H2N2) and A/NWS/1934 (H1N1).[6,7] The X-41 parent is A/Port Chalmers/1/1973 (HA, NA) x A/Puerto Rico/8/1934 (H3N2),[8] and has been shown to carry the matrix gene (RNA 7) from A/Puerto Rico/8/1934 (H1N1).[9,10] Nucleotide sequencing at BEI Resources has confirmed that NR-3544 also carries the A/Puerto Rico/8/1934 (H1N1) RNA 7. The PA gene (RNA 3) may also be derived from A/Puerto Rico/8/1934 (H1N1), or may be from A/NWS/1934 (H1N1) or A/Rockefeller Institute/5/1957 (H2N2). The genes encoding the remaining internal virion proteins and the nonstructural protein may be derived from any of A/NWS/1934 (H1N1), A/Puerto Rico/8/1934, A/Port Chalmers/1/1973 (H3N2), or A/Rockefeller Institute/5/1957 (H2N2).

The HA donor of NR-3544 is designated "A/NWS/34" in the Kilbourne Archive.[1,3,5-7] According to Kilbourne, the nomenclature for neurotropic (NWS and WSN) mutants of the original A/Wilson-Smith/1933 (H1N1) human influenza isolate does not usually require the insertion of a date, but if a date is given it should be 1933.[11] Unfortunately, the usage of A/NWS/1933 and A/NWS/1934 is inconsistent, both in the Kilbourne collection and in the literature.

Material Provided:

Each vial contains approximately 1 mL of pooled allantoic fluid from specific pathogen free (SPF) embryonated chicken eggs infected with reassortant/mutant influenza A virus, A/NWS/1934 (HA) x A/Rockefeller Institute/5/1957 (NA) x A/Port Chalmers/1/1973 x A/Puerto Rico/8/1934 (H1N2).

Packaging/Storage:

NR-3544 was packaged aseptically in screw-capped plastic cryovials. The product is provided frozen and should be stored at -60°C or colder immediately upon arrival. For long-term storage, the vapor phase of a liquid nitrogen freezer is recommended. Freeze-thaw cycles should be avoided.

Growth Conditions:

Host: 9- to 11-day-old SPF embryonated chicken eggs

Infection: Embryonated chicken eggs must be candled for viability prior to inoculation

Incubation: 2 days at 35°C in a humidified chamber

Effect: Hemagglutination activity using chicken red blood cells and allantoic fluid from infected embryonated chicken eggs

Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: Kilbourne F107: A/NWS/1934 (HA) x A/Rockefeller Institute/5/1957 (NA) x A/Port Chalmers/1/1973 x A/Puerto Rico/8/1934 (H1N2), Reassortant/Mutant X-29LT, NR-3544."

Biosafety Level: 2

Appropriate safety procedures should always be used with this material. Laboratory safety is discussed in the following publication: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, and National Institutes of Health. Biosafety in Microbiological and Biomedical Laboratories. 5th ed. Washington, DC: U.S. Government Printing Office, 2009; see www.cdc.gov/biosafety/publications/bmbl5/index.htm.

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References:

1. https://www.beiresources.org/Portals/2/Flu-archiveDocs/F107.doc
2. https://www.beiresources.org/Flu-archive.aspx
3. https://www.beiresources.org/FluVirusCatalog.aspx
4. Erickson, A. H. and Kilbourne, E. D. "Mutation in the Hemagglutinin of A/N–WS/33 Influenza Virus Recombinants Influencing Sensitivity to Trypsin and Antigenic Reactivity." Virology 107 (1980): 320-330. PubMed: 6161475.
5. https://www.beiresources.org/Portals/2/Flu-archiveDocs/F106.doc
6. https://www.beiresources.org/Portals/2/Flu-archiveDocs/F82.doc
7. https://www.beiresources.org/Portals/2/Flu-archiveDocs/F104.doc
8. https://www.beiresources.org/Portals/2/Flu-archiveDocs/F118.doc
9. Baez, M., et al. "Gene Composition of High-Yielding Influenza Vaccine Strains Obtained by Recombination." J. Infect. Dis. 141 (1980): 362-365. PubMed: 7365284.
10. Brett, I., et al. "Rapid Confirmation by RFLP of Transfer to Vaccine Candidate Reassortant Viruses of the Principal 'High Yield' Gene of Influenza A Viruses." J. Virol. Methods 100 (2002): 133-140. PubMed: 11742660.
11. http://www.beiresources.org/flu-archive/Downloads.aspx (Archive and Catalog of Influenza Virus Reassortants and Mutants).

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