

**Kilbourne F109: A/equine/Prague/1/56 (HA)  
x A/Aichi/2/68 (NA) x A/Puerto Rico/8/34  
(H7N2), Reassortant X-32**

**Catalog No. NR-3535**

Derived from NIAID Catalog No. V-331-0E5148

**For research use only. Not for human use.**

**Contributor:**

National Institutes of Allergy and Infectious Diseases,  
National Institutes of Health

**Product Description:**

Virus Classification: *Orthomyxoviridae, Influenzavirus A*

Species: Influenza A virus

Reassortant: A/equine/Prague/1/56 (HA) x A/Aichi/2/68 (NA)  
x A/Puerto Rico/8/34 (H7N2) (Kilbourne F109; X-32)<sup>1-3</sup>

Comments: Influenza A/equine/Prague/1/56 (HA) x  
A/Aichi/2/68 (NA) x A/Puerto Rico/8/34 (H7N2) viruses  
have been used as experimental neuraminidase (NA)-  
specific vaccine in humans.<sup>4</sup>

**Material Provided:**

Each vial contains approximately 1 mL of pooled allantoic  
fluid from specific-pathogen free (SPF) embryonated chicken  
eggs infected with reassortant influenza A virus,  
A/equine/Prague/1/56 (HA) x A/Aichi/2/68 (NA) x A/Puerto  
Rico/8/34 (H7N2).

**Packaging/Storage:**

NR-3535 was packaged aseptically in screw-capped plastic  
cryovials. The product is provided frozen and should be  
stored at -70°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: 1-3 days at 33-35°C in a humidified chamber  
without CO<sub>2</sub>

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

Note: This reassortant has greater NA activity than HA  
activity and more NA per virion. Therefore, HA activity  
should be measured at 4°C because of the rapid elution of  
the virus from red blood cells.

**Citation:**

Acknowledgment for publications should read "The following  
reagent was obtained through the NIH Biodefense and  
Emerging Infections Research Resources Repository, NIAID,  
NIH: Kilbourne F109: A/equine/Prague/1/56 (HA) x

A/Aichi/2/68 (NA) x A/Puerto Rico/8/34 (H7N2), Reassortant  
X-32, NR-3535."

**Biosafety Level: 3**

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, 2007; see  
[www.cdc.gov/od/ohs/biosfty/bmbl5/bmbl5toc.htm](http://www.cdc.gov/od/ohs/biosfty/bmbl5/bmbl5toc.htm).

**Disclaimers:**

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**References:**

1. [http://www.flu-archive.org/data\\_sheets/F109.doc](http://www.flu-archive.org/data_sheets/F109.doc)
2. <http://www.flu-archive.org/>
3. [http://www.flu-  
archive.org/search/results.pl?search\\_string=&join\\_type=a  
nd](http://www.flu-archive.org/search/results.pl?search_string=&join_type=and)
4. Couch, R. B. et al. "Induction of Partial Immunity to  
Influenza by a Neuraminidase-Specific Vaccine." *J. Infect.*

- Dis. 129 (1974): 411-420. PubMed: 4593871.
5. Mowshowitz, S. and E. D. Kilbourne. "Genetic Dimorphism of Neuraminidase in Recombinants of H3N2 Influenza Virus." In: Negative Strand Viruses, Volume 2. Ed. R. D. Barry and B. W. J. Mahy. Academic Press, London, 1975. 765-775.

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