

Kilbourne F178: A/Shanghai/11/1987 (HA, NA) x A/Puerto Rico/8/1934 (H3N2), High Yield, Reassortant X-99a

Catalog No. NR-3505

Product Description: Pooled allantoic fluid from specific pathogen free (SPF) embryonated chicken eggs¹ infected with high yield reassortant influenza A virus, A/Shanghai/11/1987 (HA, NA) x A/Puerto Rico/8/1934 (H3N2)

Lot^{2,3}: 60341175

Manufacturing Date: 04NOV2011

TEST	SPECIFICATIONS	RESULTS
Identification by Infectivity Using Embryonated Chicken Eggs¹ Hemagglutination activity using allantoic fluid from infected eggs and 0.5% chicken red blood cells	Positive	Positive
Sequencing of Hemagglutinin and Matrix Coding Regions Hemagglutinin (667 nucleotides) Matrix (863 nucleotides)	Consistent with A/Shanghai/11/1987/X99a (H3N2) Consistent with A/Puerto Rico/8/1934 (H1N1)	100% identity with A/Shanghai/11/1987/X99a (H3N2) (Gen Bank: L19415) ⁴ 100% identity with A/Puerto Rico/8/1934 (H1N1) (GenBank: CY033578)
Titer by CEID₅₀ Assay^{5,6} in Embryonated Chicken Eggs¹	Report results	5.0 × 10 ⁹ CEID ₅₀ per mL
Sterility (21-day incubation) Harpo's HTYE broth ⁷ , 37°C and 26°C, aerobic Trypticase soy broth, 37°C and 26°C, aerobic Sabouraud broth, 37°C and 26°C, aerobic Blood agar, 37°C, aerobic Blood agar, 37°C, anaerobic Thioglycollate broth, 37°C, anaerobic DMEM with 10% FBS, 37°C and 5% CO ₂	No growth No growth No growth No growth No growth No growth No growth	No growth No growth No growth No growth No growth No growth No growth
Mycoplasma Contamination Agar and broth culture (14-day incubation at 37°C) DNA detection by PCR of extracted Test Article nucleic acid	None detected None detected	None detected None detected

¹11-day-old SPF Embryonated Chicken Eggs acquired from B&E Eggs, York Springs, Pennsylvania

²Derived from NIAID Catalog No. V-331-0E4916

³Grown in the allantoic cavity of embryonated chicken eggs¹ for 2 days at 35°C in a humidified chamber

⁴The H3 HA sequence of NR-3505 is identical to the X-99a sequence originally deposited to NCBI by Kilbourne et al, including the point mutation responsible for the critical serine for isoleucine substitution at amino acid 186 (Kilbourne, E. D., et al. "Influenza A Virus Haemagglutinin Polymorphism: Pleiotropic Antigenic Variants of A/Shanghai/11/87 (H3N2) Virus Selected as High Yield Reassortants." *J. Gen. Virol.* 74 (1993): 1311-1316. PubMed: 8336120.); as expected, the NR-3505 H3 HA sequence differs slightly from other influenza A/Shanghai/11/1987 H3 HA sequences in the NCBI database.

⁵The Chicken Embryo Infectious Dose 50% (CEID₅₀) is the dilution of virus that under the conditions of the assay can be expected to infect 50% of the inoculated embryonated chicken eggs, just as a Lethal Dose 50% (LD₅₀) is expected to kill half of the animals exposed. A reciprocal of the dilution required to yield the CEID₅₀ provides a measure of the infectious titer (or infectivity) of a virus preparation.

⁶2 days at 35°C in a humidified chamber

⁷Atlas, Ronald M. *Handbook of Microbiological Media*. 3rd ed. Ed. Lawrence C. Parks. Boca Raton: CRC Press, 2004, p. 798.

Certificate of Analysis for NR-3505

Date: 13 JUN 2012

Signature: 

Title: Technical Manager, BEI Authentication or designee

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