

**Human Respiratory Syncytial Virus,
A1998/12-21**

Catalog No. NR-28528

For research use only. Not for use in humans.

Contributor:

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Manufacturer:

BEI Resources

Product Description:

Virus Classification: *Pneumoviridae, Orthopneumovirus*

Species: Human Respiratory Syncytial Virus

Strain: A1998/12-21

Original Source: Human respiratory syncytial virus (RSV), A1998/12-21 was isolated from a nasal wash from an infant with RSV bronchiolitis in Nashville, Tennessee on December 12, 1998.¹

Comments: A1998/12-21 is one of six clinical RSV isolates that recently were shown to induce variable disease severity, lung interleukin-13 (IL-13) levels, and gob-5 levels in BALB/cJ mice.² IL-13 is a cytokine linked to mucus production and gob-5 is a calcium-activated chloride channel family member implicated in airway inflammation.^{3,4} Compared to mock infection, RSV A1998/12-21 infection led to relatively high levels of gob-5 in lung tissue, but no significant elevation in IL-13 expression, and no weight loss in infected mice.² The complete genome of hRSV, A1998/12-21 has been sequenced (GenBank: [JX069802.1](https://www.ncbi.nlm.nih.gov/nuccore/JX069802.1)).

RSV was first isolated from infants in 1957 and is recognized as the primary cause of hospitalization for lower respiratory tract illnesses among infants and young children worldwide.^{5,6} RSV has a negative-sense RNA genome encoding for 10 proteins, of which 2 are nonstructural.⁶ RSV envelope glycoprotein (G protein) is integral to the immunity and pathogenesis of the virus, and depending on its sequence variation, RSV is divided into two groups, A and B.⁶ No vaccine for RSV is available; however, intravenous prophylaxis with RSV immune globulins has been shown to be effective.⁷

Material Provided:

Each vial contains approximately 1 mL of cell lysate and supernatant from *Homo sapiens* epithelial carcinoma cells (HEp-2; ATCC® CCL-23™) infected with hRSV, A1998/12-21.

Note: If homogeneity is required for your intended use, please purify prior to initiating work.

Packaging/Storage:

NR-28528 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: *Homo sapiens* epithelial carcinoma cells (HEp-2; ATCC® CCL-23™)

Growth Medium: Eagle's minimum essential medium modified to contain Earle's Balanced Salt Solution, non-essential amino acids, 2 mM L-glutamine, 1 mM sodium pyruvate, and 1500 milligrams per liter sodium bicarbonate supplemented with 2% fetal bovine serum, or equivalent

Infection: Cells should be approximately 80 to 90% confluent

Incubation: 4 to 11 days at 37°C and 5% CO₂

Cytopathic Effect: Cell rounding and syncytia formation

Citation:

Acknowledgment for publications should read "The following reagent was obtained through BEI Resources, NIAID, NIH: Human Respiratory Syncytial Virus, A1998/12-21, NR-28528."

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. 6th ed. Washington, DC: U.S. Government Printing Office, 2020; see www.cdc.gov/biosafety/publications/bmb15/index.htm.

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References:

1. Moore, M. L., Personal Communication.
2. Stokes, K. L., et al. "Differential Pathogenesis of Respiratory Syncytial Virus Clinical Isolates in BALB/c Mice." J. Virol. 85 (2011): 5782-5793. PubMed: 21471228.
3. Nakanishi, A., et al. "Role of gob-5 in Mucus Overproduction and Airway Hyperresponsiveness in Asthma." Proc. Natl. Acad. Sci. USA 98 (2001): 5175-5180. PubMed: 11296262.
4. Walter, D. M., et al. "Critical Role for IL-13 in the Development of Allergen-Induced Airway Hyperactivity." J. Immunol. 167 (2001): 4668-4675. PubMed: 11591797.
5. Hall, C. B. "The Burgeoning Burden of Respiratory Syncytial Virus Among Children." Infect. Discord. Drug Targets 12 (2012): 92-97. PubMed: 22335498.
6. Hall, C. B. "Respiratory Syncytial Virus and Parainfluenza Virus." N. Engl. J. Med. 344 (2001): 1917-1928. PubMed: 11419430.
7. Howard, T. S., et al. "Respiratory Syncytial Virus Pneumonia in the Hospital Setting: Length of Stay, Charges, and Mortality." J. Pediatr. 137 (2000): 227-232. PubMed: 10931416.

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