

**Human Respiratory Syncytial Virus,
A2001/2-20**

Catalog No. NR-28525

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: A2001/2-20

Original Source: Human respiratory syncytial virus (hRSV), A2001/2-20 was isolated from a nasal wash from an infant with RSV bronchiolitis in Nashville, Tennessee on February 20, 2001.¹

Comments: hRSV, A2001/2-20 is one of six clinical 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, hRSV, A2001/2-20 infection led to relatively high levels of gob-5 and significantly elevated levels of IL-13 in lung tissue. This isolate also induced a bimodal weight loss pattern in infected mice, with peaks at day 2 and day 6 post-infection. hRSV, A2001/2-20 infection caused the most severe disease of any isolate tested, and was characterized by airway hyperresponsiveness and mucin expression, perivascular edema, epithelial desquamation, bronchiolitis and increased breathing effort.² The complete genome of hRSV, A2001/2-20 has been sequenced (GenBank: [JX069798](https://www.ncbi.nlm.nih.gov/nuccore/JX069798)).

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, A2001/2-20.

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

Packaging/Storage:

NR-28525 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: Dulbecco's Modified Eagle's Medium modified to contain 4 mM L-glutamine, 4500 milligrams per liter glucose, 1 mM sodium pyruvate and 1500 milligrams per liter of sodium bicarbonate supplemented with 2% fetal bovine serum, or equivalent

Infection: Cells should be approximately 80 to 90% confluent

Incubation: 5 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, A2001/2-20, NR-28525."

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. U.S.A. 98 (2001): 5175-5180. PubMed: 11296262.
4. Walter, D. M., et al. "Critical Role for IL-13 in the Development of Allergen-Induced Airway Hyperreactivity." J. Immunol. 167 (2001): 4668-4675. PubMed: 11591797.

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