

Product Information Sheet for NR-28525

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/Isolate: 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](#)).

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 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 mg/L glucose, 1 mM sodium pyruvate and 1500 mg/L sodium bicarbonate supplemented with 2% fetal bovine serum or equivalent

Infection: Cells should be 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 (BMBL). Current Edition. Washington, DC: U.S. Government Printing Office.

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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 Hyperreactivity." J. Immunol. 167 (2001): 4668-4675. PubMed: 11591797.

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