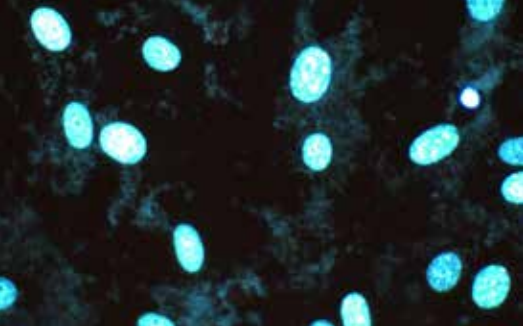

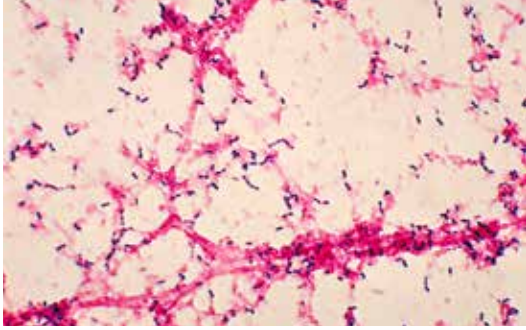

ATCC®

THE ESSENTIALS OF
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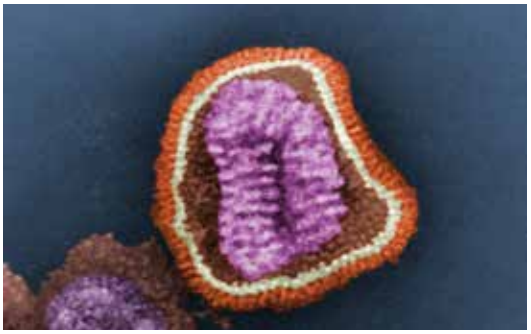
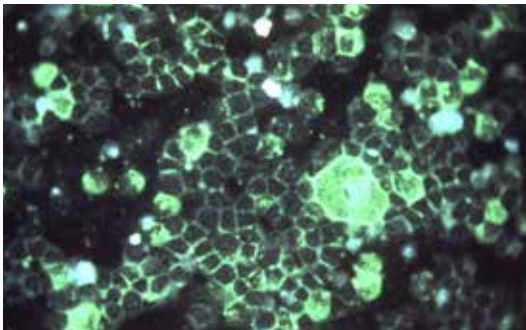
Human Respiratory Disease



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RESOURCES FOR HUMAN INFECTIOUS RESPIRATORY DISEASE RESEARCH

Acute respiratory diseases are the leading cause of infectious disease morbidity and mortality in the world, contributing to nearly four million deaths annually[1]. Depending on the causative agent, these infections are characterized by a wide spectrum of symptoms ranging from asymptomatic or mild infection, such as rhinorrhea and odynophagia, to severe or chronic disease, such as bronchitis and pneumonia. Because the symptoms of many infectious respiratory diseases are non-specific, it is imperative that rapid and accurate diagnostic tests are available for clinical use.

ATCC offers a wide range of pathogenic microorganisms known to cause respiratory disease in humans, including the causative agents of:

- Influenza
- Pneumonia
- Legionnaires disease
- Tuberculosis
- Cryptococcosis
- Histoplasmosis

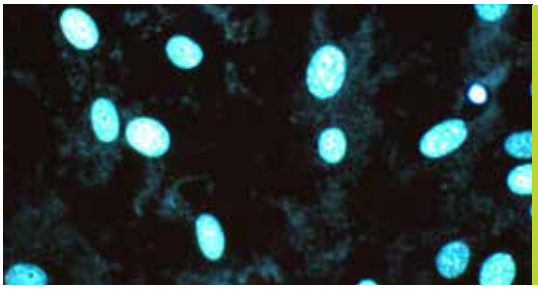
These strains are ideal for the development, verification, and evaluation of novel diagnostic assays and therapeutic treatments.

Let ATCC help you get your respiratory infectious disease research moving faster with ATCC Genuine Cultures®! Want to go straight to nucleic acids and skip *in vitro*? ATCC® Genuine Nucleics offers a growing selection of native, synthetic, and quantitative CRM nucleic acids for use in assay development and performance evaluation, such as inclusivity/exclusivity and limits of detection.

Visit us online at www.atcc.org/respiratory to learn more about ATCC products that support reproducible and reliable respiratory disease research, including additional strains, cell lines, associated products, and relevant nucleic acids.

Bacteria

ATCC® No.	Organism	Designation	Isolation
BAA-2700™	*Bordetella pertussis*	H735	Nasopharyngeal swab, California, USA, 2010
BAA-2701™	*Bordetella pertussis*	H792	Nasopharyngeal swab, Vermont, USA, 2010
BAA-2702™	*Bordetella pertussis*	H898	Nasopharyngeal swab, New York, USA
BAA-2703™	*Bordetella pertussis*	H914	Nasopharyngeal swab, Washington, USA
BAA-2704™	*Bordetella pertussis*	H915	Nasopharyngeal swab, Washington, USA
BAA-2705™	*Bordetella pertussis*	H920	Nasopharyngeal swab Washington, USA, 2011
BAA-2707™	*Bordetella pertussis*	I028	Nasopharyngeal swab, Washington, USA, 2012
BAA-2708™	*Bordetella pertussis*	I135	Nasopharyngeal swab, Minnesota, USA, 2012
10856™	*Burkholderia cepacia*	[NCPPB 1962]	
25609™	*Burkholderia cepacia*	[NCDC A977 (EO-1 group), NCTC 10744]	Bronchial washings, Greensboro, NC
VR-1310™	*Chlamydophila pneumoniae*	CWL-029	
VR-1360™	*Chlamydophila pneumoniae*	CM-1	
VR-1452™	*Chlamydophila pneumoniae*	AO3	
8142™	*Haemophilus influenzae*	AMC 36-A-7 [595, NCTC 8472]	
9007™	*Haemophilus influenzae*	AMC 36-A-5 [624, NCTC 8469]	Sputum of patient with respiratory infection
9332™	*Haemophilus influenzae*	522 [D99, NCTC 8470, d2, g]	Throat culture
10211™	*Haemophilus influenzae*	AMC 36-A-1 [572]	
35056™	*Haemophilus influenzae*	[CIP 103777]	Beta-lactamase positive, Upper respiratory infection
49247™	*Haemophilus influenzae*	TD-4	Expectorated sputum from a 76 year-old human male with pneumonia, Worcester Massachusetts, January, 1984
49766™	*Haemophilus influenzae*	L-378	Lung abscess of 57-year-old patient
53600™	*Haemophilus influenzae*	1479	Sputum of patient with chronic bronchitis
BAA-1705™	*Klebsiella pneumoniae*	ART 2008133 [D-05, 1338]	2007 CAP Survey; 42 year old male, urine
BAA-2342™	*Klebsiella pneumoniae*	1101160	Clinical specimen
BAA-1899™	*Klebsiella pneumoniae*		Human, Northern Virginia, USA
BAA-1903™	*Klebsiella pneumoniae*		Human, Pennsylvania, USA
BAA-1905™	*Klebsiella pneumoniae*		Human, New York City, USA, 2008
11296™	*Klebsiella pneumoniae* subsp. *ozaenae*	AMC 35-E-5 [NCTC 5050]	
29019™	*Klebsiella pneumoniae* subsp. *ozaenae*	CDC 2826-74	Sputum, South Carolina Dept. of Health and Environmental Control
13883™	*Klebsiella pneumoniae* subsp. *pneumoniae*	NCTC 9633 [NCDC 298-53, NCDC 410-68]	
700721™	*Klebsiella pneumoniae* subsp. *pneumoniae*	MGH78578	Sputum from a 66 year-old man, 1994
BAA-2470™	*Klebsiella pneumoniae* subsp. *pneumoniae*	1002565	Respiratory sample
BAA-2472™	*Klebsiella pneumoniae* subsp. *pneumoniae*	1100975	Respiratory sample
6908™	*Klebsiella pneumoniae* subsp. *rhinoscleromatis*	NCTC 1936 [NCDC 415-68]	Rhinoscleroma in a Malay woman
13884™	*Klebsiella pneumoniae* subsp. *rhinoscleromatis*	NCTC 5046 [NCDC 417-68, R-70]	Nose of patient in Sumatra
43106™	*Legionella pneumophila*	Allentown 1 [NCTC 12024]	
BAA-74™	*Legionella pneumophila*	F1724 [130b, AA100]	Transtracheal aspirate, 1978



MYCOPLASMA RESPIRATORY INFECTION

Mycoplasma pneumoniae is a human pathogen known to cause the disease mycoplasma pneumonia, a form of atypical pneumonia. The symptoms of this illness are generally mild, and are frequently associated with upper respiratory tract disease. Visit us online at www.atcc.org to find the strains and associated nucleic acids you need to detect and prevent the spread of mycoplasma. For information on how these strains can affect cell cultures, visit our mycoplasma quality control page at www.atcc.org/mycoplasmacrms.

Bacteria (continued)

ATCC® No.	Organism	Designation	Isolation
33156™	*Legionella pneumophila* subsp. *fraseri*	Los Angeles-1	Human lung
35251™	*Legionella pneumophila* subsp. *fraseri*	Lansing 3	Human lung tissue
33152™	*Legionella pneumophila* subsp. *pneumophila*	Philadelphia-1	Human lung
33215™	*Legionella pneumophila* subsp. *pneumophila*	Chicago 2	Human lung biopsy
43283™	*Legionella pneumophila* subsp. *pneumophila*	Leiden 1 [Le 1, NCTC 12000]	Respiratory tract secretions, the Netherlands
43290™	*Legionella pneumophila* subsp. *pneumophila*	570-CO-H	Human lung tissue
43736™	*Legionella pneumophila* subsp. *pneumophila*	82A3105	Lung aspirate, California
25177™	*Mycobacterium tuberculosis*	H37Ra	
35801™	*Mycobacterium tuberculosis*	TMC 107 [Erdman]	Human sputum
35806™	*Mycobacterium tuberculosis*	TMC 112 [Hand]	Human sputum
BAA-812™	*Mycobacterium tuberculosis*	CDC-MPEP 200206 [H]	Human clinial specimen, United States, October 13, 1998
BAA-2236™	*Mycobacterium tuberculosis*	X004439	Human sputum from patient with pulmonary tuberculosis, San Francisco, CA, USA, 2002
BAA-2514™	*Mycobacterium tuberculosis*	Rv-narGHJI-KO+306narGHJI	Laboratory-engineered strain
BAA-2516™	*Mycobacterium tuberculosis*	Rv-glpK-KO+306glpK	Laboratory-engineered strain
BAA-2517™	*Mycobacterium tuberculosis*	Rv+262glpK	Laboratory-engineered strain
BAA-2518™	*Mycobacterium tuberculosis*	Rv+306hsp-glpK	Laboratory-engineered strain
BAA-2519™	*Mycobacterium tuberculosis*	Rv-pdx1-KO+306pdx1	Laboratory-engineered strain
BAA-2520™	*Mycobacterium tuberculosis*	Rv +306glyol	Laboratory-engineered strain
BAA-2521™	*Mycobacterium tuberculosis*	Rv+262rv0577	Laboratory-engineered strain
15492™	*Mycoplasma pneumoniae*	[Mac]	Human lung tissue

PNEUMOCOCCAL POLYSACCHARIDES

Diseases caused by the bacterium *Streptococcus pneumoniae* are a major global health concern. Millions of people become infected with this pathogen each year, developing serious conditions such as pneumonia, meningitis, and otitis media. The severity of these pneumococcal diseases is primarily attributed to variations in the composition and structure of the capsular antigen. To aid in your research, ATCC offers 25 types of purified pneumococcal polysaccharides in three package sizes. To view a full listing of these materials, visit our website at www.atcc.org/polysaccharides.

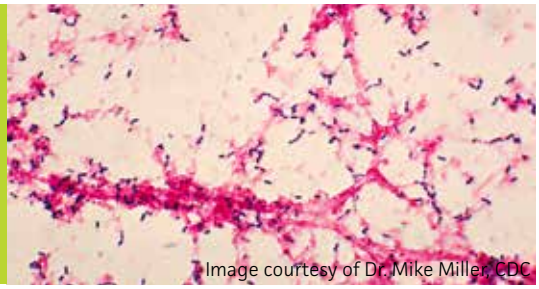


Image courtesy of Dr. Mike Miller, CDC

Bacteria

ATCC® No.	Organism	Designation	Isolation
15531™	*Mycoplasma pneumoniae*	FH strain of Eaton Agent [NCTC 10119]	Isolated by Hayflick from monkey kidney tissue-culture fluids of the FH strain (Eaton Agent Virus) supplied by C. Liu, who recovered this strain in embryonated eggs from a student with atypical pneumonia.
29085™	*Mycoplasma pneumoniae*	PI 1428	Throat of patient with atypical pneumonia
29342™	*Mycoplasma pneumoniae*	M129-B7	Patient with pneumonia
17831™	*Pseudomonas aeruginosa*	416 [NCPPB 1966, PJ 491]	Post-mortem lung
27318™	*Pseudomonas aeruginosa*	PD-05154 [NCIB 10781, S-3, VAD-S3]	Human lung
39324™	*Pseudomonas aeruginosa*	2192	Sputum from a cystic fibrosis patient, Boston, MA
51677™	*Pseudomonas aeruginosa*	AB181	Sputum from a cystic fibrosis patient, London, England
6303™	*Streptococcus pneumoniae*	[CIP 104225]	
49619™	*Streptococcus pneumoniae*	262 [CIP 104340]	Sputum of 75-year-old male, Phoenix, AZ
700677™	*Streptococcus pneumoniae*	Slovakia 14-10 [29055]	Human patient, Czechoslovakia, 1987
BAA-255™	*Streptococcus pneumoniae*	R6	
BAA-659™	*Streptococcus pneumoniae*	97-1177 [North Carolina 6A-23]	Human clinical specimen, North Carolina, United States

Fungi

ATCC® No.	Organism	Designation	Isolation
13073™	*Aspergillus fumigatus*	5233 [NIH 5233]	Human pulmonary lesion, Maryland
MYA-3626™	*Aspergillus fumigatus*	T33439	California, United States
MYA-3627™	*Aspergillus fumigatus*	FG 1432	Jacksonville Tennessee, United States
MYA-4609™	*Aspergillus fumigatus*	CBS 101355 [AF 293]	
14248™	*Cryptococcus gattii*	110 [CBS 883]	Skin of patient with blastomycosis
56989™	*Cryptococcus gattii*	RV 5265	Cerebrospinal fluid, human, Zaire
56991™	*Cryptococcus gattii*	RV 25803	Human, Zaire
MYA-4093™	*Cryptococcus gattii*	A1M R265	Bronchial alveolar lavage, Duncan, Vancouver Island, B.C. Canada.
MYA-4560™	*Cryptococcus gattii*	WM179 [CBS 10078]	Human, Australia
MYA-4877™	*Cryptococcus gattii*	A6MR38 [CBS 11545]	CSF of immunicompetent human, Oregon, USA
13690™	*Cryptococcus neoformans*	D	Human cryptococcal meningitis
24067™	*Cryptococcus neoformans*	52 [52D, CDC B3179]	Human cerebrospinal fluid, Maryland, USA
34877™	*Cryptococcus neoformans*	NIH 76	Cerebrospinal fluid
36556™	*Cryptococcus neoformans*	613 [61-11756]	Human spleen and lung

INFLUENZA RESEARCH MATERIALS

Major disease outbreaks are associated with the circulation of Influenza virus types A and B in the human population. ATCC offers a number of examples of each virus type from a variety of geographical sources, grown in chicken embryos and tissue culture. To view a full listing of these strains, as well as associated antisera, RNA, and monoclonal antibodies, visit ATCC online at www.atcc.org/respiratory.

Fungi

ATCC® No.	Organism	Designation	Isolation
62066™	*Cryptococcus neoformans*	6	Clinical isolate, France
MYA-4565™	*Cryptococcus neoformans*	WM626 [CBS 10084]	Human, Australia.
208821™	*Cryptococcus neoformans* var. *grubii*	H99 [H99JP, NYSD 1649]	Patient with Hodgkin's disease, New York
8136™	*Histoplasma capsulatum*	[ATCC 8296]	
12700™	*Histoplasma capsulatum*	6624 [ATCC 28307, CDC A811]	Sputum, Ohio
24867™	*Histoplasma capsulatum*	105 [CDC 105]	Human spleen
26032™	*Histoplasma capsulatum*	G-217B	Human, Louisiana
32281™	*Histoplasma capsulatum* var. *duboisii*	RV 26821	Human histoplasmosis, Belgium
PRA-159™	*Pneumocystis carinii*	M167-6	Isolated by M Collins from the lungs of an immunosuppressed Lewis male rat (*Rattus norvegicus*), Cincinnati, OH, October 2003.
PRA-111™	*Pneumocystis murina*		Cultured *in vivo*, rat lung tissue

Viruses

ATCC® No.	Organism	Designation	Isolation
VR-1816™	Recombinant Adeno-associated virus 8	Recombinant Adeno-associated Virus 8 Reference Standard Stock (rAAV8-RSS)	
VR-1558™	Betacoronavirus 1	OC43	
VR-1™	Human adenovirus 1	Adenoid 71	
VR-3™	Human adenovirus 3	GB	
VR-1572™	Human adenovirus 4	RI-67	
VR-5™	Human adenovirus 5	Adenoid 75	
VR-1516™	Human adenovirus 5	Adenovirus Type 5 Reference Material	
VR-7™	Human adenovirus 7	Gomen	
VR-848™	Human adenovirus 7a	S-1058	Presumed from throat swab from case of undifferentiated respiratory infection, Maryland
VR-1815™	Human adenovirus 8	Trim	Presumed to be from a case of epidemic keratoconjunctivitis, California, 1955.

Viruses (continued)

ATCC® No.	Organism	Designation	Isolation
VR-1818™	Human adenovirus 10	Trim-ATCC	Presumed to be from a case of epidemic keratoconjunctivitis, California, 1955.
VR-12™	Human adenovirus 11	Slobitski	Feces, human, Massachusetts, United States
VR-863™	Human adenovirus 12	Huie	Stool from case of suspected poliomyelitis, Massachusetts
VR-15™	Human adenovirus 14	de Wit	Throat washings of recruit with acute respiratory illness, Netherlands, 1955
VR-19™	Human adenovirus 18	D.C.	Anal swab from child with Niemann-Pick syndrome, Washington, DC, 1954
VR-718™	Human adenovirus 35	Holden	Lung and kidney tissues from 61-year-old woman who died with diffuse interstitial pneumonia
VR-740™	Human coronavirus 229E	229E	
VR-1823™	Human Enterovirus D68	US/MO/14-18947	Nasopharyngeal swab from patient with respiratory illness, Missouri, September 2014
VR-1824™	Human Enterovirus D68	US/IL/14-18952	Nasopharyngeal swab from patient with respiratory illness, Illinois, September 2014
VR-1825™	Human Enterovirus D68	US/KY/14-18953	Nasopharyngeal swab from patient with respiratory illness, Kentucky, September 2014
VR-94™	Human parainfluenza virus 1	C35	
VR-92™	Human parainfluenza virus 2	Greer	
VR-93™	Human parainfluenza virus 3	C 243	
VR-1378™	Human parainfluenza virus 4a	M-25	
VR-1377™	Human parainfluenza virus 4b	CH 19503	
VR-26™	Human respiratory syncytial virus	Long	
VR-955™	Human respiratory syncytial virus	9320	
VR-1400™	Human respiratory syncytial virus	B WV/14617/85	
VR-1540™	Human respiratory syncytial virus	A2	
VR-1540P™	Human respiratory syncytial virus, Purified	A2	
VR-1580™	Human respiratory syncytial virus	18537	
VR-1803™	Human respiratory syncytial virus	ATCC-2012-11	Specimen from a clinical patient in Virginia, 2012
VR-1559™	Human rhinovirus 1A	2060	Derived from existing strain
VR-488™	Human rhinovirus 8	MRH [MRH-CV12]	Human throat washings
VR-1567™	Human rhinovirus 11	1 [1-CV-15]	Derived from existing strain
VR-284™	Human rhinovirus 14	1059	
VR-283™	Human rhinovirus 16	11757	
VR-507™	Human rhinovirus 34	137-3	Human throat washings
VR-340™	Human rhinovirus 39	209	
VR-1197™	Human rhinovirus 87	FO2-3607 Corn [V-194-001-021]	
VR-1300™	Human rhinovirus 100	K6579	Upper respiratory tract
VR-95™	Influenza A virus (H1N1)	A/PR/8/34	
VR-96™	Influenza A virus (H1N1)	A/Weiss/43	Patient in United States, 1943
VR-97™	Influenza A virus (H1N1)	A/FM/1/47	
VR-98™	Influenza A virus (H1N1)	A/Mal/302/54	Patient in Malaya, 1954
VR-219™	Influenza A virus (H1N1)	A/NWS/33	
VR-544™	Influenza A virus (H3N2)	A/Hong Kong/8/68	
VR-546™	Influenza A virus (H1N1)	A/Denver/1/57	
VR-547™	Influenza A virus (H3N2)	A/Aichi/2/35	
VR-776™	Influenza A virus (H3N2)	A/Alice	Derived from MRC-2 (recombinant)
VR-777™	Influenza A virus (H3N2)	MRC 2	Human (recombinant A/England/42/72 and A/PR8/34 influenza strains)
VR-810™	Influenza A virus (H3N2)	A/Port Chalmers/1/73	
VR-822™	Influenza A virus (H3N2)	A/Victoria/3/75	
VR-825™	Influenza A virus (H1N1)	A/WS/33	

Viruses (continued)

ATCC® No.	Organism	Designation	Isolation
VR-897™	Influenza A virus (H1N1)	A/New Jersey/8/76 (Hsw N1)	
VR-1469™	Influenza A virus (H1N1)	A/PR/8/34	
VR-1520™	Influenza A virus (H1N1)	A/WS/33	
VR-1679™	Influenza A virus (H3N2)	A/Hong Kong/8/68	
VR-1680™	Influenza A virus (H3N2)	A/Aichi/2/68	
VR-1736™	Influenza A virus (H1N1)	A/Virginia/ATCC1/2009	This item was isolated in tissue culture.
VR-1737™	Influenza A virus (H1N1)	A/Virginia/ATCC2/2009	
VR-1738™	Influenza A virus (H1N1)	A/Virginia/ATCC3/2009	This item was isolated in tissue culture.
VR-1754™	Influenza A virus (H1N1)	A/Fort Monmouth/1/1947 (H1N1)	
VR-1811™	Influenza A virus	A/Virginia/ATCC6/2012	Clinical specimen from a patient in Virginia, 2012.
VR-101™	Influenza B virus	B/Lee/40	
VR-102™	Influenza B virus	B/Allen/45	
VR-103™	Influenza B virus	B/GL/1739/54	
VR-295™	Influenza B virus	B/Taiwan/2/62	
VR-296™	Influenza B virus	B/Maryland/1/59	
VR-523™	Influenza B virus	B/Mass/3/66	Throat washings from patient in US, 1966
VR-786™	Influenza B virus	B/Brigit	Human case of influenza type B/Russia/69
VR-787™	Influenza B virus	B/R5	Recombinant of B/Hong Kong/8/73 (ATCC® VR-792™) and influenza B/Brigit (ATCC® VR-786™)
VR-788™	Influenza B virus	B/R22 Barbara	Recombinant of B/Hong Kong/5/72 (ATCC® VR 791™) and B/Brigit (ATCC® VR 786™)
VR-789™	Influenza B virus	B/R75	Derived from a cross of existing strains
VR-790™	Influenza B virus	B/Russia/69	Influenza patient
VR-823™	Influenza B virus	B/Hong Kong/5/72	
VR-1535™	Influenza B virus	B/Lee/40	
VR-1735™	Influenza B virus	B/Taiwan/2/62	
VR-1784™	Influenza B virus	B/Virginia/ATCC4/2009	
VR-1807™	Influenza B virus	B/Virginia/ATCC5/2012	Clinical specimen from a patient in Virginia, 2012.
VR-1804™	Influenza B virus	B/Florida/4/2006	Human, Florida, 2006
VR-1813™	Influenza B virus	B/Massachusetts/2/2012	Human, Massachusetts, 2012
VR-1782™	Parainfluenza 3	ATCC-2011-5	
VR-483™	Rhinovirus 3	FEB	Human throat washings
VR-495™	Rhinovirus 20	15 [15-CV19]	Human throat washings
VR-496™	Rhinovirus 21	47 [47-CV21]	Human throat washings
VR-498™	Rhinovirus 23	5124 [5124-CV24]	Human throat washings
VR-499™	Rhinovirus 24	5146 [5146-CV25]	Human throat washings
VR-1661™	Rhinovirus 54	FO 1-3774	Human throat washings
VR-1199™	Rhinovirus 89	41467 Gallo [V-196-001-021]	
VR-105™	Sendai virus	Sendai/52	
VR-907™	Sendai virus	Cantell	

Some of the strains referenced in this guide are not available for international distribution. Visit us online at www.atcc.org to check the availability of specific strains in certain geographical areas. Though each of the following species has been shown to cause respiratory disease in humans, ATCC has not tested individual strains for pathogenicity.

REFERENCES

1. World Health Organization. Infection prevention and control of epidemic- and pandemic-prone acute respiratory diseases in health care. WHO Interim Guidelines, 2007.
2. Centers for Disease Control and Prevention. Respiratory syncytial virus infection (RSV), 2013. www.cdc.gov/rsv/

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