

Respiratory Viral Panel

Introduction

Respiratory viruses are the most common cause of acute illness in the United States,¹ and they are a particularly significant cause of morbidity and mortality in young children, elderly adults, and immunocompromised persons. Historically, traditional methods such as direct fluorescent antibody (DFA) assay and culture methods have been used to assist physicians in diagnosing viral respiratory tract infections. Nucleic acid sequence-based amplification has shown greater sensitivity than DFA and culture with the additional ability to detect the presence of multiple and emerging viruses rapidly.²

The ability to identify a particular virus quickly and specifically as the etiologic agent of syndromic diseases like bronchiolitis and pneumonia has been demonstrated to result in reduced hospital stays, decreased use of unnecessary antibiotics, and elimination of superfluous diagnostic procedures and laboratory tests.³ Detection of respiratory viruses using sensitive real-time nucleic acid amplification tests is invaluable for patient and outbreak management.⁴

Respiratory Virus Panel Assay

The xTAG™ Respiratory Viral Panel represents the majority of circulating respiratory disease-causing pathogens. Its broad range of pathogens covers respiratory viruses commonly reported in surveillance and clinical settings.

The xTAG™ Respiratory Viral Panel is a comprehensive molecular diagnostic test for the detection of a broad range of viruses and subtypes, including:

- Adenovirus
- Influenza A
- Influenza A, subtype H1
- Influenza A, subtype H3
- Influenza B
- Metapneumovirus
- Parainfluenza 1
- Parainfluenza 2
- Parainfluenza 3
- Respiratory Syncytial Virus (RSV) A
- Respiratory Syncytial Virus (RSV) B
- Rhinovirus

Test Characteristics and Performance

- FDA-cleared assay intended for the simultaneous detection and identification of multiple respiratory virus nucleic acids.
- Excellent sensitivity, including 96.4% for influenza A, and 100% for RSV A and B.
- Rapid analysis using real-time xMAP™ technology.
- High reproducibility through high-volume production of xMAP microspheres within a single lot.

Respiratory Virus Panel (RVP), PCR 139250

CPT 87798(x10)

Related Information Adenovirus Detection by PCR (138164)

Test Includes Adenovirus; influenza A; influenza A, subtype H1; influenza A, subtype H3; influenza B; metapneumovirus; parainfluenza 1; parainfluenza 2; parainfluenza 3; respiratory syncytial virus (RSV) A; respiratory syncytial virus (RSV) B; rhinovirus

Specimen Nasopharyngeal swab in universal transport medium or respiratory wash (ie, nasal wash, nasal aspirate, or bronchoalveolar lavage (BAL)/wash, **frozen**)

Volume 0.5 mL wash or 1 swab

Minimum Volume 0.2 mL wash or 1 swab

Container Universal transport medium: swab, **frozen**; sterile container: bronchoalveolar lavage/wash or nasopharyngeal wash/aspirate, **frozen**

Storage Instructions Freeze

Causes for Rejection Quantity not sufficient for analysis; specimen grossly contaminated; leaking or broken tube

Use Multiplexed detection of respiratory viruses using the xTAG™ RVP PCR assay (Luminex®). The assay detects the following viruses: influenza A, influenza B, RSV A, RSV B, parainfluenza 1, parainfluenza 2, parainfluenza 3, rhinovirus, metapneumovirus, and adenovirus. The assay also subtypes influenza A virus (H1 and H3).

Methodology Multiplex polymerase chain reaction (PCR)

References

1. Luminex xTAG™ RVP (Respiratory Viral Panel) package insert MLD-019-RPI-001 Rev001.
2. Mahony J, Chong S, Merante F, et al. Development of a respiratory virus panel test for detection of twenty human respiratory viruses by use of multiplex PCR and a fluid microbead-based assay. *J Clin Microbiol.* 2007 Sep; 45(9):2965-2970.
3. Henrickson KJ. Cost-effective use of rapid diagnostic techniques in the treatment and prevention of viral respiratory infections. *Pediatr Ann.* 2005; 34(1): 24-31.
4. Pabbaraju K, Tokaryk K, Wong S, Fox JD. Comparison of the Luminex xTAG Respiratory Viral Panel with in-house nucleic acid amplification tests for diagnosis of respiratory virus infections. *J Clin Microbiol.* 2008 Sep; 46(9):3056-3062.