

Human Metapneumovirus by Real-Time RT-PCR

MOLECULAR DETECTION OF HUMAN METAPNEUMOVIRUS INFECTION

Test Highlights

- Real-time RT-PCR detection of human metapneumovirus.
- More rapid and sensitive than traditional culture and DFA methods.
- Utilizes an RNA internal control to monitor nucleic acid extraction and RT-PCR inhibition.

Clinical Background

- Acute respiratory tract infections are a leading cause of morbidity and mortality in all age groups. Young children, the elderly, and immunocompromised individuals are at greatest risk of developing these infections.
- General symptoms can include fever, congestion, rhinorrhea, cough, and myalgia, as well as more serious clinical symptoms such as wheezing, bronchiolitis, pneumonia, and respiratory failure.
- A number of significant respiratory tract infections are caused by human metapneumovirus.
- Rapid diagnosis of acute respiratory infections may aid in patient management and triage, potentially reducing antibiotic use.
- Human metapneumovirus replicates poorly in cell cultures, and culture is not recommended for clinical testing. DFA testing is useful for rapid diagnosis but has limited sensitivity. Real-time PCR testing for human metapneumovirus is a highly sensitive and rapid method for diagnosis of respiratory infections caused by human metapneumovirus.

Indications for Ordering

To confirm the presence of human metapneumovirus in patients presenting with clinical symptoms associated with acute respiratory infection.

Interpretation

A positive result is strongly supportive of a diagnosis of respiratory infection caused by human metapneumovirus.

Limitations

- A negative result does not rule out the presence of human metapneumovirus, nucleic acid in quantities below the sensitivity of this assay, or the possibility of RT-PCR inhibitors in the sample.
- Unidentified sequence variations within the targeted region of the genome may lead to a false negative result.

Methodology

- RNA is extracted from samples suspected of containing human metapneumovirus, followed by real-time RT-PCR. Primers and hybridization probes are utilized for amplification and detection.
- An RNA internal control is also multiplexed into each assay for monitoring the nucleic-acid extraction, as well as the reverse transcription and PCR processes for inhibition.

Related Tests

[Human Metapneumovirus by DFA \(0060779\)](#)

References

1. Boivin G, et al. Virological features and clinical manifestations associated with human metapneumovirus: a new paramyxovirus responsible for acute respiratory-tract infections in all age groups. *J Infect Dis* 2002;186:1330-1334.
2. Ordás J, et al. Role of Metapneumovirus in Viral Respiratory Infections in Young Children. *J Clin Microbiol* 2006;44:2739-2742.
3. Kahn JS. Epidemiology of human metapneumovirus. *Clin Microbiol Rev* 2006;19:546-557.

Test Information

0060784 **Human Metapneumovirus by RT-PCR**

For specific collection, transport, and testing information, refer to the ARUP Web site at www.aruplab.com.

For information on test selection, ordering, and interpretation, refer to ARUP Consult® at www.arupconsult.com.