Overview

Useful For

Rapid, sensitive, and specific identification of *Mycoplasma hominis* from synovial fluid, genitourinary, reproductive, lower respiratory sources, pleural/chest fluid, pericardial fluid, and wound specimens

This test is **not intended for** medicolegal use.

Testing Algorithm

See Infective Endocarditis: Diagnostic Testing for Identification of Microbiological Etiology in Special Instructions.

Special Instructions

- Infective Endocarditis: Diagnostic Testing for Identification of Microbiological Etiology

Method Name

Real-Time Polymerase Chain Reaction (PCR) Using LightCycler and Fluorescent Resonance Energy Transfer (FRET)

NY State Available

Yes

Specimen

Specimen Type

Varies

Necessary Information

Specimen source is required.

Specimen Required

The high sensitivity of amplification by PCR requires the specimen to be processed in an environment in which contamination of the specimen by *Mycoplasma hominis* DNA is not likely.

Submit only 1 of the following specimens:

Supplies:

-M4-RT (T605)

-Culturette (BBL Culture Swab) (T092)

Specimen Type: Swab

Sources: Vaginal, cervix, urethra, urogenital, chest/mediastinal; bronchus (donor swab); or upper respiratory sources (only infants <3 months: nasopharynx, nose, throat)

Container/Tube:

Preferred: Culture swab transport system (Dacron or rayon swab with aluminum or plastic shaft with either Stuart or Amies liquid medium: T092)

Acceptable: Swab in transport media: M4, M4-RT (T605), M5, M6, universal transport media, or ESwab

Specimen Volume: 1 swab

Collection Instructions:

Vaginal:

1. Collect specimen by swabbing back and forth over mucosa surface to maximize recovery of cells.

2. Place swab back into swab cylinder.

Urethra or Cervical:

1. Collect specimen by inserting swab 1 to 3 cm and rotating 360 degrees.

2. Place swab back into swab cylinder.

Wound:

1. Collect specimen by swabbing back and forth over wound surface to maximize recovery of cells.

2. Place swab back into swab cylinder.

Supplies: M4-RT (T605)

Specimen Type: Fluid

Sources: Pelvic, peritoneal, amniotic, prostatic secretions, semen, reproductive drainage or fluid, pleural/chest, chest tube, pericardial, sputum, tracheal secretions, bronchial washings, bronchoalveolar lavage, lung; or nasal washings (only infants <3 months)

Container/Tube:

Preferred: Sterile container

Acceptable: Container with 3 mL of transport media: M4, M4-RT (T605), M5, M6, or universal transport media

Specimen Volume: 1-2 mL

Specimen Type: Synovial Fluid

Container/Tube:

Preferred: Lavender top (EDTA)

Acceptable: Pink top (EDTA), royal blue top (EDTA), sterile vial containing EDTA-derived aliquot, red clot tube (no anticoagulant), or sterile container

Specimen Volume: 0.5 mL

Collection Instructions: Send specimen in original tube (preferred).

Specimen Type: Urine, kidney/bladder stone, or ureter

Container/Tube: Sterile container

Specimen Volume: 10 mL or entire specimen

Specimen Type: Tissue

Sources: Placenta, products of conception, urogenital, respiratory, bronchus, chest/mediastinal, bone, or joint

Container/Tube: Sterile container

Specimen Volume: 5 mm(3)

Collection Instructions:

1. Collect fresh tissue specimen.

2. Submit fresh tissue only, do not add fluid to tissue

3. Refrigerate or freeze specimen.

Forms

If not ordering electronically, complete, print, and send a Microbiology Test Request (T244) with the specimen.

Specimen Minimum Volume

Fluid: 1 mL
Urine: 2 mL
Swab: 1 swab
Tissue: 5 mm(3)

Reject Due To

Swab/Other	Cotton or calcium alginate-tipped swab, wooden shaft swab, transport swab containing gel or charcoal, formalin-fixed and/or paraffin-embedded tissues, Port-a-Cul tube, anaerobic fluid vials, or dry swab (no pledget or sponge), decalcified bone; slides

Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Varies	Refrigerated (preferred)	7 days	
	Frozen	7 days	

Clinical and Interpretive

Clinical Information

Mycoplasma hominis has been associated with a number of clinically significant infections, although it is also part of the normal genital flora.

M hominis may be found in the respiratory specimens and spinal fluid of neonates. Although the clinical significance of such findings is often unclear, as spontaneous clinical recovery may occur without specific treatment, in premature infants, clinical manifestations of meningoencephalitis have been reported.

M hominis may play a role in some cases of pelvic inflammatory disease, usually in combination with other organisms. *M hominis* may be isolated from amniotic fluid of women with preterm labor, premature rupture of membranes, spontaneous term labor, or chorioamnionitis; there is evidence that it may be involved in postpartum fever or fever following abortion, usually as a complication of endometritis.

M hominis has rarely been associated with septic arthritis (including prosthetic joint infection), pyelonephritis, intraabdominal infection, wound infection, endocarditis, central nervous system infection (including meningoencephalitis, brain abscess, central nervous system shunt infection and subdural empyema), pneumonia, and infected pleural and pericardial effusions. Extragenital infection typically occurs in those with hypogammaglobulinemia or depressed cell-mediated immunity; in lung transplant recipients in particular, *M hominis* has been associated with pleuritis and mediastinitis. Recent evidence implicates donor transmission in some cases of *M hominis* infection in lung transplant recipients.

PCR detection of *M hominis* is sensitive, specific, and provides same-day results. Although this organism can occasionally be detected in routine plate cultures, this is neither a rapid nor a sensitive approach to detection. Specialized cultures are more time consuming than the described PCR assay. The described PCR assay has replaced conventional culture for *M hominis* at Mayo Clinic Laboratories due to its speed and equivalent performance to culture.

Reference Values

Not applicable

Interpretation

A positive PCR result for the presence of a specific sequence found within the *Mycoplasma hominis tuf* gene indicates the presence of *M hominis* DNA in the specimen.

A negative PCR result indicates the absence of detectable *M hominis* DNA in the specimen, but does not rule-out infection as falsely negative results may occur due to inhibition of PCR, sequence variability underlying the primers and probes, or the presence of *M hominis* in quantities less than the limit of detection of the assay.

Cautions

Interfering substances may affect the accuracy of this assay; results should always be interpreted in conjunction with clinical and epidemiological findings

Since *Mycoplasma hominis* may be part of the normal flora, results should be interpreted accordingly.

This test does not detect other mycoplasmas or ureaplasmas (including *Mycoplasma pneumoniae,* a common cause

of community acquired pneumonia).

Clinical Reference

1. Sampath R, Patel R, Cunningham SA, et al: Cardiothoracic Transplant Recipient *Mycoplasma hominis*: An Uncommon Infection with Probable Donor Transmission. EBioMedicine, 2017 May; 19: 84-90

2. Waites KB, Bebear C: *Mycoplasma* and *Ureaplasma*. In Manual of Clinical Microbiology. 12th edition. Edited by KC Carroll, MA Pfaller. ASM Press, Washington, DC, 2019, pp 1117-1136

Performance

Method Description

This PCR method employs a target-specific detection system including primers, as well as fluorescent resonance energy transfer (FRET) hybridization probes designed for *tuf* gene of *Mycoplasma hominis*. The LightCycler instrument amplifies and monitors target nucleic acid sequences by fluorescence during PCR cycling. This is an automated PCR system that can rapidly detect amplified product development. The detection of amplified products is based on the FRET principle. For FRET product detection, a hybridization probe with a donor fluorophore, fluorescein, on the 3' end is excited by an external light source, which emits light that is absorbed by a second hybridization probe with an acceptor fluorophore, LC-Red 640, on the 5' end. The acceptor fluorophore then emits light of a different wavelength that is measured with a signal that is proportional to the amount of specific PCR product. The process is completed in a closed-tube system.(Cunningham SA, Mandrekar JN, Rosenblatt JE, Patel R: Rapid PCR Detection of *Mycoplasma hominis, Ureaplasma urealyticum,* and *Ureaplasma parvum*. Int J Bacteriol 2013 Jan 30, doi: 10.1155/2013/168742)

PDF Report

No

Day(s) and Time(s) Test Performed

Monday through Friday

Analytic Time

3 days

Maximum Laboratory Time

4 days

Specimen Retention Time

1 week

Performing Laboratory Location

Rochester

Fees and Codes

Fees

- Authorized users can sign in to Test Prices for detailed fee information.
- Clients without access to Test Prices can contact Customer Service 24 hours a day, seven days a week.
- Prospective clients should contact their Regional Manager. For assistance, contact Customer Service.

Test Classification

This test was developed and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA requirements. This test has not been cleared or approved by the U.S. Food and Drug Administration.

CPT Code Information

87798

LOINC® Information

Test ID	Test Order Name	Order LOINC Value
MHRP	Mycoplasma hominis PCR	68546-1

Result ID	Test Result Name	Result LOINC Value
SRC86	Specimen source	31208-2
32536	Mycoplasma hominis PCR	68546-1