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**Lab Dept:** Microbiology/Virology

**Test Name:** CHLAMYDIA TRACHOMATIS CULTURE

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***General Information***

**Lab Order Codes:** CHLC

**Synonyms:** Chlamydia culture

**CPT Codes:** 87110 – Culture, Chlamydia, any source

**Test Includes:** Tissue culture with detection by fluorescent monoclonal antibody.

Amplified RNA testing is recommended for detection of *Chlamydia trachomatis* from endocervical, vaginal or urethral specimens. Refer to [Chlamydia/GC Amplified RNA Assay](#).

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***Logistics***

**Test Indications:** Used to detect *Chlamydia trachomatis* in medicolegal settings and to assess suspected treatment failure. May be considered for anatomic locations for which amplified testing has not been validated.

**Lab Testing Sections:** Virology

**Phone Numbers:** MIN Lab: 612-813-5806

STP Lab: 651-220-6555

**Test Availability:** Daily, 24 hours

**Turnaround Time:** 2 - 3 days

**Special Instructions:**

- **Do Not** use calcium alginate swabs or swabs with wooden shafts as both are toxic to chlamydia.
- **Do Not** use ProbeTec swabs or GenProbe transport system.
- Requisition must **state specific** site of specimen and **date/time of collection**.
- If both gonorrhea and chlamydia testing are requested, collect **2 separate** specimens. The gonorrhea specimen should be collected prior to the chlamydia specimen.
- This organism infects the columnar epithelial cells and will not be found in the inflammatory cells.

- **Chlamydia specimens not in transport media must be received in lab within 1 hour of collection.**

## ***Specimen***

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**Specimen Type:** Bronch, tissue, swab of conjunctiva, cervix ,vagina, oropharynx, posterior nasopharynx, rectum, urethra, or peritoneal fluid

**Container:** Chlamydia transport media (M4 VTM or BD/copan Universal Transport Media UTM) (available in Microbiology)

Swab transport system

**Volume:** **1 swab**

**Aspirate or sputum:** 0.5 mL

**Collection:**

**Cervical:**

1. Remove exudate prior to collection of specimen.
2. Gently insert separate large swab or cytobrush into endocervical canal past squamocolumnar junction. Rotate cytobrush one full turn. If using a swab, rotate for 5 - 10 seconds.
3. To avoid contamination, withdraw swab while avoiding touching any vaginal surfaces.
4. If specimen cannot be transported to the lab immediately, place swab in transport media and refrigerate.

**Conjunctival:**

1. Using a sterile cotton ball or gauze, clear eye of any mucus or discharge.
2. Moisten swab with sterile saline. Vigorously swab across conjunctiva, sampling the less affected conjunctiva first to reduce potential for further contamination of that eye. For suspected trachoma, the specimen should be taken from the upper fornix of the conjunctiva. In inclusion conjunctivitis, the specimen should be taken from the lower conjunctiva.
3. If specimen cannot be transported to the lab immediately, place swab in transport media and refrigerate.
4. Scrapings: Instill one or two drops of topical anesthetic and scrape the lower tarsal conjunctiva. If specimen cannot be transported to the lab immediately, place in transport media and refrigerate.

**Nasopharyngeal:**

1. Obtain 2 specimens using 2 NP swabs (i.e. MiniTip™ Culturette).
2. Gently insert swab through nose into posterior nasopharynx.

3. Gently rotate swab slowly for 5 seconds to absorb secretions.
4. Collect a second specimen in the same manner.
5. If specimen cannot be transported to the lab immediately, place swabs in transport medium and refrigerate.

**Oropharyngeal:**

1. Depress tongue with tongue depressor.
2. Sample the posterior pharynx, tonsils, and inflamed areas with a sterile swab.
3. If specimen cannot be transported to the lab immediately, place swab in transport media and refrigerate.

**Bronchoscopy:**

1. Specimen obtained by physician through the biopsy channel of the bronchoscope.
2. Transfer specimen into a luki tube.
3. Transport to the Microbiology Laboratory immediately.

**Tissue:**

1. Submit specimen in a screw-capped, sterile container.
2. Maintain sterility and forward promptly.
3. If there is a delay in transport of 1 hour or more, place specimen in transport media and refrigerate.

**Rectal:**

1. Insert swab approximately 1 inch into anal canal.
2. Gently move the swab from side to side to sample the anal crypts.
3. If fecal contamination occurs, discard swab and use another to obtain specimen.
4. If specimen cannot be transported to the lab immediately, place swab in transport media and refrigerate.

**Urethral (Males Only):**

1. Instruct the patient not to urinate for 1 hour prior to sampling.
2. Remove excess mucus/pus with a cotton ball or swab. Discard cotton ball or swab.

3. Insert a separate swab 4-6 cm into the urethra. Gently rotate swab, using sufficient pressure to obtain an adequate number of epithelial cells.

4. If specimen cannot be transported to the lab immediately, place swab in transport media and refrigerate.

**Vaginal Swab:**

1. Insert swab about 5 cm past introitus and rotate gently for 30 seconds.

2. If specimen cannot be transported to the lab immediately, place swab in transport media and refrigerate.

**Special Processing:** Specimens must be placed in transport media within **one hour** of collection. Do not remove swabs from transport media.

**Transport/Storage:** **Onsite collections:** Transport to the laboratory immediately.

**Offsite collections:** Refrigerate specimen in transport media (VTM or UTM) if there is a delay in transport of <24 hours. If there is a delay in transport of >24 hours, send specimen in transport media frozen at -70° C on dry ice.

**Sample Rejection:** Specimen not in transport media with a transit time exceeding 1 hour; not submitted in appropriate transport container; improperly labeled specimen; insufficient volume; external contamination. If an unacceptable specimen is received, the physician or nursing station will be notified and another specimen will be requested before the specimen is discarded.

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***Interpretive***

**Reference Range:** No *Chlamydia trachomatis* isolated.

**Limitations:**

- A single negative culture may not rule out the presence of chlamydial infection. Chlamydia is an obligate intracellular parasite and does not survive well outside the host system. The sensitivity of culture probably is only 70% to 90% because *Chlamydia trachomatis* does not always survive transit to the laboratory and because of often inadequate sample with multiple swabs.
- This test will not detect *Chlamydia psittaci* or *Chlamydia pneumoniae*.

**Methodology:** Tissue culture and immunofluorescence

**References:** Cook, JH, and M Pezzlo (2010). Specimen receipt and accessioning. Section 1. Aerobic bacteriology, 1.2.1-4. In HD Isenberg (ed) Clinical Microbiology Procedures Handbook. American Society for Microbiology, Washington DC

Miller, J Michael (1999) A Guide To Specimen Management in Clinical Microbiology, American Society for Microbiology, Washington DC

Miller, J Michael, and HT Holmes (1999) Specimen Collection, Transport, and Storage In PR Murray et al, (ed), Manual of Clinical Microbiology, 7<sup>th</sup> edition, American Society for Microbiology, Washington DC, pg 33-104

Papp, John et al (3/4/2014) Recommendations for the Laboratory –Based Detection of Chlamydia trachomatis and Neisseria gonorrhoeae. MMWR 2014, 63 (No. RR-02) pg 1-7, Centers for Disease Control

**Updates:**

11/20/2007: Added information about transport swabs and processing of specimens not sent in transport media.

11/23/2010: Update to special processing.

6/5/2013: Added vaginal swab and peritoneal fluid as acceptable specimen types. Added Test Indications and updated comment recommending amplified RNA testing for routine detection from endocervical or urethral specimens.

11/20/2014: Offsite information added.