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**Lab Dept:** Microbiology/Virology

**Test Name:** EYE CULTURE AND GRAM STAIN

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***General Information***

**Lab Order Codes:** EYEC

**Synonyms:** Culture, Eye; Culture, Conjunctiva; Culture, Cornea

**CPT Codes:** 87070 – Culture, bacterial; any other source except urine, blood or stool, with isolation and presumptive identification of isolates  
87205 – Smear, primary source with interpretation; Gram or Giemsa stain for bacteria, fungi or cell types

The following testing may be added if appropriate based on findings for organism identification (multiple additions are possible if more than one organism is identified) and to aid in patient treatment management.

87076 – Anaerobic isolate, additional methods required for definitive identification of isolates  
87077 – Aerobic isolate, additional methods required for definitive identification, each isolate (if appropriate)  
87106 – Culture, fungi, definitive identification, each organism, yeast (if appropriate)  
87107 – Culture, mold, definitive identification, each organism, mold (if appropriate)  
87147 – Culture, typing; immunologic method, other than immunofluorescence (e.g., agglutination grouping), per antiserum (if appropriate)  
87184 – Susceptibility studies, disk method, per plate (if appropriate)  
87185 – Enzyme detection (eg, beta lactamase), per enzyme (if appropriate)  
87186 – Susceptibility studies, microdilution or agar dilution, each multi-antimicrobial, per plate (if appropriate)  
87206 – Smear, primary source with interpretation, fluorescent and/or acid fast stain for bacteria, fungi or cell types (if appropriate)

**Test Includes:** Aerobic culture and a Gram stain

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***Logistics***

**Lab Testing Sections:** Microbiology

**Phone Numbers:** MIN Lab: 612-813-5866

STP Lab: 651-220-6555

**Test Availability:** Daily, 24 hours

**Turnaround Time:** Preliminary reports are available at 24 hours. Cultures from which pathogens are isolated require at least 2 days for completion.

**Special Instructions:**

- **Specimen site and date/time of collection** are required for processing.
- Specify organism suspected since special isolation procedures may be required.
- This procedure will not detect *Chlamydia*, fungi, *Mycobacterium sp.*, or viruses, which may cause conjunctivitis and/or keratitis. If these organisms are suspected, refer to separate listings for [Chlamydia Culture](#), [AFB Culture](#), [Fungal Culture](#) or [Viral Culture](#).

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## ***Specimen***

**Specimen Type:** Swab or scrapings of the cornea; OD = right eye, OS = left eye

**Container:** Swab transport system

**Collection:**

**Onsite collections:**

**Conjunctiva:**

1. Swab: Pass moistened swab two times over lower conjunctiva. Avoid eyelid border and lashes. Place in swab transport medium.
2. Contact Microbiology for media for direct inoculation.
3. Scrapings: Instill one or two drops of topical anesthetic and scrape the lower tarsal conjunctiva. Inoculate plates directly (BAP, CHOC).

**Corneal scraping:**

1. Procedure performed by ophthalmologist.
2. Contact Microbiology for media for direct inoculation.
3. Direct culture inoculation: BHI with 10% sheep blood, Chocolate agar, and SABS.

**Offsite collections:**

Collect by swab only. Pass moistened swab two times over lower conjunctiva. Avoid eyelid border and lashes. Place swab in transport medium.

**Transport/Storage:**

**Onsite collections:** Transport to the laboratory immediately. Directly inoculated plates should be delivered in <15 minutes at room temperature.

**Offsite collections:** Refrigerate specimen. Specimens must be promptly transported to the laboratory, with the next available courier, not to exceed 24 hours from the time of collection. However, delayed transport causes a delay of test results.

**Sample Rejection:** Improperly labeled specimen; specimens with prolonged transit time (see [Transport/Storage](#) for requirements); specimen not submitted in appropriate transport container; 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**

<b>Reference Range:</b>	<p><b>Normal Flora</b> of the eye may include <i>Corynebacterium sp.</i> (diphtheroids), coagulase negative staphylococci, <i>Neisseria sp.</i>, <i>Moraxella catarrhalis</i>, <i>Moraxella sp.</i>, streptococci (nonhemolytic), and gram-negative rods (rare).</p> <p>Abnormal Ocular Flora includes: <i>Haemophilus influenzae</i>, <i>Streptococcus pneumoniae</i>, group A <i>Streptococcus</i>, <i>Staphylococcus aureus</i>, <i>Pseudomonas aeruginosa</i>, <i>Bacillus</i> species, <i>Neisseria gonorrhoeae</i>, some saprophytic fungi, and <i>Mycobacterium chelonae</i></p>
<b>Alert Value:</b>	<ul style="list-style-type: none"><li>• Gram-negative rods identified as ESBL or Carbapenemase producers will be called to the physician or patient's nurse. Infection Prevention will be notified.</li><li>• If MRSA is isolated for the first time, and the patient location is not Emergency department, the result will be called to the physician or patient's nurse.</li></ul>
<b>Limitations:</b>	Organisms are more readily detected in scrapings than from a swab.
<b>Methodology:</b>	Culture
<b>References:</b>	<p>Cook, JH, and M Pezzlo (1992). 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</p> <p>Miller, J Michael (1999) A Guide To Specimen Management in Clinical Microbiology, American Society for Microbiology, Washington DC</p> <p>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, pp 33-104</p>
<b>Updates:</b>	<p>3/23/2010: CPT Updates 3/7/2011: CPT Updates 6/19/2012: Alert Value added 11/12/2014: Offsite collect information added.</p>