
Lab Dept: Microbiology

Test Name: KOH PREP

General Information

Lab Order Codes: KOH

Synonyms: Fungal smear

Related information: Refer to [Fungal Culture](#), [Yeast Culture](#) or [Gram Stain](#).

CPT Codes: 87220 - Tissue examination by KOH slide of samples from skin, hair, or nails for fungi

Test Includes: Direct examination of specimen for fungal elements.

Logistics

Lab Testing Sections: Microbiology

Phone Numbers: MIN Lab: 612-813-5866

STP Lab: 651-220-6555

Test Availability: Daily, 24 hours

Turnaround Time: 4 hours; upon receipt in the laboratory

Special Instructions: **Specimen site and date/time of collection** are required for processing.

Specimen

Specimen Type: Bronchial aspirate, hair, nails, pus, skin, sputum, or tissue

Container: Sterile container

Volume: Visible material

Collection: **Offsite collections:** Do not refrigerate, store at room temperature. 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.

Bronchoscopy:

1. Specimen obtained by physician through the biopsy channel of the bronchoscope.
2. Transfer specimen into a luki tube.

Hair:

1. With forceps, collect at least 10 - 12 affected hairs with the base of the shaft intact.
2. Place in sterile container.

Nails:

1. Remove nail polish.
2. Wipe nail with 70% alcohol using gauze (not cotton).
3. Clip a generous portion of the affected area and collect scrapings of the excess keratin produced under the nail.
4. Place in sterile container.

Skin:

1. Gently scrape the surface of the skin at the active margin of the lesion. **Do not** draw blood.
2. Place scrapings between two clean glass slides.

Pus, Exudate or Drainage:

1. Using a sterile needle and syringe, aspirate material from undrained abscesses.
2. Place in a sterile container.

Sputum (Expectorate):

1. Collect early morning specimen under the direct supervision of a nurse or a physician.
2. Have patient rinse or gargle with water to remove superficial flora.
3. Instruct patient to cough deeply to produce a lower respiratory specimen.
4. **Do not** submit saliva.
5. Place in a sterile container.

Sputum (Induced):

1. Have patient rinse mouth with water after brushing gums and tongue.
2. With the aid of a nebulizer, have patients inhale ~25 mL of 3 to 10% sterile saline.
3. Collect the induced sputum in a sterile container.

Tissue:

1. Submit in sterile container.
2. For small samples, add a few drops of sterile saline to keep moist.
3. **Do not** allow tissue to dry out.
4. The portion of the biopsy specimen submitted for culture should be

separated from the portion submitted for histopathology by the surgeon or pathologist.

Transport/Storage:	Onsite collections: Transport to the Microbiology Laboratory immediately. Offsite collections: Do not refrigerate , store at room temperature. 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.
Patient Preparation:	Sterile preparation of collection site.
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; specimen in fixative. 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.

Interpretive

Reference Range:	No fungal elements seen.
Critical Values:	Spherules consistent with <i>Coccidioides immitis</i> or broad-based, budding yeast consistent with the tissue phase of <i>Blastomyces dermatitidis</i> . Physician will be notified.
Limitations:	<p>The sensitivity of a KOH prep is relatively low (20-75%). If the specimen is from the mucous membranes, bronchial aspirate, or sputum, a Gram Stain may be more sensitive.</p> <p>Cultures are usually more sensitive than KOH preparations or gram stains. Refer to Fungal Culture or Yeast Culture. The test may require overnight incubation for complete disintegration of hair, nail, or skin debris.</p>
Methodology:	Direct microscopic exam of proteinaceous material after hydrolysis with 10% KOH.
References:	<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, 7th edition, American Society for Microbiology, Washington DC, pp 33-104</p>

Updates:

3/9/2011: Added references to Gram Stain.
11/20/2014: Offsite information added.