



KOH Test

Identifier:	KOH Test Procedure	Version #:	2
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PRINCIPLE

10% KOH is a strong alkali used to digest cellular elements and other contaminants that would otherwise obscure the presence of fungal elements (e.g. pseudohyphae and yeast). Its use with brain biopsies is limited because artifactual material resembling yeast cells result. Brain biopsies should be evaluated with a Gram stain. KOH dissolves squamous cells and lyses red blood cells.


SCOPE

All McLaren Health Care physicians, including McLaren Medical Group (MMG) Managed sites and practices managed by their subsidiary hospital performing Provider Performed Microscopy.

POLICY

1. The KOH procedure is a moderate complexity test. Staff must follow all Provider Performed Microscopy (PPM) guidelines. See Provider Performed Microscopy (PPM) procedure.
2. An online, image-based program called Med-Training Solutions is used to distribute competency and proficiency assignments, track test completion, test scores, and provide printable reports for documentation. An Email notification is sent to the Providers and provides an autologin link. The Provider clicks on this link to go directly to their test menu and assignments.
3. Results will be documented in the Med Training Solutions online program. Reports can be downloaded to PDF or copied to an Excel file. Real time printable reports and documentation are available by the POC administrators of the Med Training Solutions program.
4. If staff does not meet the minimum requirements of 80% on the proficiency or competency, the staff will be reassigned training modules with review of testing procedures. Staff will repeat proficiency or competency testing.

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5. The off-site POC Coordinator will assign the staff competency annually upon hire and each year thereafter. Alternate Proficiency material will be assigned 2 times per year to all staff performing PPM (Provider Performed Microscopy) testing.
6. All testing personnel must be tested for colorblindness before performing patient tests.
7. Universal precautions must be followed during the collection of specimen and performance of test. Appropriate protective equipment must be worn.

REAGENTS and MATERIAL

KOH Reagent vial
Microscope slides
Pipettes
Coverslips
Gloves

Precautionary Notes:

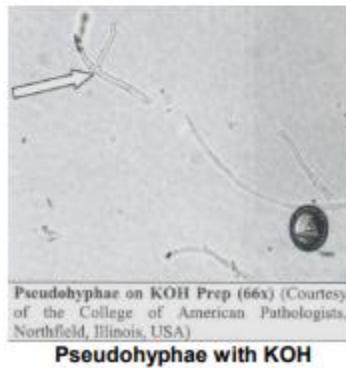
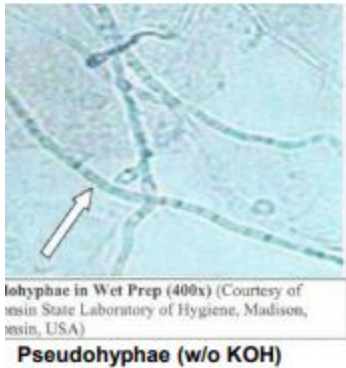
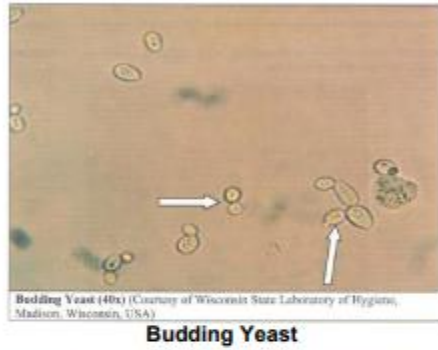
Store at room temperature, 15° - 30°
Do not use after expiration date.

QUALITY CONTROL

Commercial controls are not available. Reference material and/or the intranet can be used as a resource to aid in identification.

PROCEDURE

1. Place 1-3 drops of KOH in the center of a clear glass slide.
2. Place a fragment of tissue, purulent material, or scraping in the KOH.
 - a. Tease the material well enough with the corner of a coverslip to give a thin preparation or break up the material with a sterile biological probe.
 - b. Check the slide immediately for a "fishy", amine odor and note presence or absence. (The odor indicates anaerobic bacteria overgrowth.)
3. Allow the slide preparation to rest for up to 5 minutes for vaginal specimens and up to 30 minutes for other specimens to allow cellular tissue and other debris to dissolve.
 - a. Optional: Gently warm slide to facilitate clearing of the specimen.
 - b. NOTE: Overheating may cause crystallization of the KOH
4. Cover with a coverslip.
 - a. Gently press on slide to help disperse tissue material.



INTERPRETATION and RESULTING

- ❑ Examine under low power (10X) for budding yeast and pseudohyphae and under high (40X) or oil immersion objective with a bright-field or contrast microscope to verify presence of fungal elements.
- ❑ Fungal elements should become visible in thick, viscid, or opaque specimens following treatment with 10% KOH. Look for branching of hyphae and septa. Yeast cells with budding should be seen if positive.
- ❑ Document in the patient's medical record the KOH result, initials, and date performed.

LIMITATIONS

- KOH can grow fungus if stored beyond the expiration date. Do not use if solution appears cloudy.
- Cotton strands from the swab may resemble fungal elements.

REFERENCES

Isenberg, H.D., et. al., Eds., Essential Procedures for Clinical Microbiology, ASM Press, Washington, D.C., 1998.
Massachusetts General Hospital-Pathology Service, KOH Test Procedure
BD 10% Potassium Hydroxide Insert

9/17: alternate proficiency
1/18: PPM Procedure
2/19 Updated procedure with pics
6/19 MTS Program