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| AFB Culture and Smear  |
| **Purpose** | This procedure provides instructions for AFB CULTURE for the microbiology laboratory. |
| **Policy Statements** | This procedure applies to microbiologists that process specimens and interpret results.  |
| **Principle and Clinical Significance** | Accurate laboratory results require adequate collection and transport of appropriate specimens for mycobacterial detection. Smear and culture for acid-fast bacilli, identification, and drug resistance studies when requested will be performed by Mayo Medical Laboratories (MML).  |
| **Test Code** | **AFBB** (Culture and Smear, non-blood)* Automatically ordered together

**MYCOB** (blood) |
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|  | **Supplies** |
| **Materials** | * Bone Marrow: Lithium heparin tube (or Isolator™ 1.5 tube)
* Blood: Sodium (preferred) or Lithium heparin tube or Isolator™ 10 tube
* All other sources: Sterile container
* 1 ml sterile saline tube to moisten tissue specimens
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| Sample | * For specimen collection, transport, storage and rejection information, refer to the Lab Test Directory:
* Lab Test Directory [AFB Culture & Smear (non-blood)](https://www.childrensmn.org/References/Lab/microbioviral/afb-culture-smear-%28non-blood%29.pdf)
* Lab Test Directory [AFB Blood Culture](https://www.childrensmn.org/References/Lab/microbioviral/blood-culture-afb-%28acid-fast-bacilli%29.pdf)
* *Special Instruction*: Gastric aspirates are collected from pediatric patients to simulate sputum samples, because they cannot produce acceptable sputum samples, unless induced
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| **Special Safety Precautions** | Microbiologists/virologists are subject to occupational risks associated with specimen handling. Refer to the safety policies located in the safety section of the *Microbiology Procedure Manual*and the *Virology Procedure Manual* 1. [*Biohazard Containment*](https://starnet.childrenshc.org/References/labsop/mcvi/safety/mcvi-3.1-biohazard-containment.pdf)
2. [*Safety in the Microbiology/Virology Laboratory*](https://starnet.childrenshc.org/References/labsop/mcvi/safety/mcvi-3.2-safety-in-the-microbiology-lab.pdf)
* [*Biohazardous Spills*](https://starnet.childrenshc.org/References/labsop/mcvi/safety/mcvi-3.4-biohazardous-spills.pdf)
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| **Processing** | Specimen processingPlace the specimen in a sterile leak-proof container for transport.Label with the patient’s name, accession number, date of collection, and source of specimen.Neutralize gastric fluid specimens within one hour of collection. The fluid should be adjusted to a neutral pH with 10% sodium bicarbonate.MPLS: 10% sodium bicarbonate is found in virology on the set-up cart by the hood.St Paul: 10% sodium bicarbonate is found on the culture bench counter. Check with pH paper to determine that the specimen is at a neutral pH. Moisten tissues by adding a few drops of THIO or saline to prevent drying in transit. 1. Refrigerate all AFBB specimens in the send-out refrigerator pending transport.
2. Store all MYCOB specimens in the send-out room temperature area pending transport.
3. **Clerical**
* Send-out staff will track and pack up the specimens to go to Mayo Medical Laboratories(MML)
* Preliminary positive results will be called and faxed by MML to the microbiology laboratory.
* All finalized MML results will be interfaced to the Sunquest computer system.
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| **Limitations** | * Specimens submitted on swabs are not recommended. Negative results are unreliable on specimens obtained on swabs.
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| **Result Reporting** | * Refer to the [Acid-Fast Bacilli Resulting & Susceptibility Add-On](https://starnet.childrenshc.org/References/labsop/mcvi/comp/mcvi-5.4-acid-fast-bacilli-reporting-and-susceptbility-add-on.pdf) procedure for complete instructions on how to call and report positive smears and/or cultures. Susceptibility add-on information is also available.
* **Critical Value:** All positive smear and culture results will be reported immediately by telephone to the physician or the patient’s nurse. Document in the computer the person called and date/time of call.
* Antimicrobial Susceptibility Testing (AST) on *Mycobacterium* isolates will be performed at MML upon physician request.
* If a culture requires a correction, the code **CORR** (corrected report) must be reported on an observation line in the Direct Exam or Culture Entry tab. Refer to the procedure [*Labeling Errors/Specimen Mix-ups*](https://starnet.childrenshc.org/References/labsop/mcvi/comp/mcvi-5.1-labeling-errors-specimen-mix-up.pdf).
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| **References** | 1. Della-Latta, P. and Weitzman, I., Section 4. Mycobacteriology, 4.2. *In* H.D. Isenberg (Ed) *Essential Procedures for Clinical Microbiology.* 1998, American Society for Microbiology, Washington, D.C.
2. Leber, Amy. Clinical Microbiology Procedures Handbook, 4th edition. Vol. 1-3. 2016. American Society for Microbiology, Washington D.C., 20036.
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| **Training Plan/ Competency Assessment** | **Training Plan** | **Initial Competency Assessment** |
| 1. Employee must read the procedure
2. Employee will observe trainer performing the procedure.
3. Employee will demonstrate the ability to perform procedure, record results and document corrective action after instruction by the trainer.
 | Direct Observation. |
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| **Historical Record** | **Version** | **Written/Revised by:** | **Effective Date:** | **Summary of Revisions** |
| 1.0 | Pat Ackerman | 1973 | Initial Version |
| 1.1 | Pat Ackerman | 01/1992 |  |
| 1.2 | Pat Ackerman | 07/05/2003 |  |
|  | 1.3 | Pat Ackerman | 12/09/2005 |  |  |  |
| 1.4 | Pat Ackerman | 12/27/2006 | Updated blood culture and bone marrow collection using isolator tubes; updated gastric neutralization. |
| 1.5 | Pat Ackerman | 06/02/2007 | Updated Sunquest 6.2 Information. Added work label definition. |
| 1.6 | Jessica Craig | 05/14/2010 | Updated into online format. |
| 1.7 | Becky Carlson | 11/01/2011 | Swab specimens must be submitted in sterile saline-not culturette. |
| 1.8 | Eileen Brinkman | 02/28/2013 | Swabs are no longer acceptable for AFB culture. |
| 1.9 | Becky Carlson | 03/13/2015 | Updated National Jewish AST codesAFB1 discontinued.Micro label definition SBH code changed to MDHL |
| 2 | Becky Carlson | 4/10/2015 | Re-numbered from MC 402, and removed Authorization and Review sections  |
| 3  | Becky Carlson | 5/9/2016 | Revised reference lab information to MML Labs. Direct AFB smears no longer performed in-house. |
|  | 4 | Susan DeMeyere/ Andrew Fangel | 10/22/2018 | Updated test code to AFBB. Hyperlink AFB resulting procedure.  |