

Laboratory Test Descriptions

Microbiology	Immunology
Bacteriology Mycobacteriology Mycology Parasitology Amplification Testing STAT Lab Antibiotic Susceptibility Testing Virology	Autoimmune Serology Infectious Disease Serology Protein Electrophoresis

Microbiology is staffed 24/7 and offers full diagnostic testing in Bacteriology (aerobic and anaerobic), Antimicrobial Susceptibility Testing, Mycobacteriology, Mycology, Parasitology, and Virology.

Microbiology

Bacteriology--Aerobic and anaerobic bacteria are biochemically identified to the species level using manual and automated methodologies.

Mycobacteriology--Mycobacteria are identified to species level using sequencing. DNA probes are used to identify the common species such as M. tuberculosis and M. avium complex. Acid-fast stains of specimens are available within 24 hours after collection, 7 days a week. Direct testing by nucleic acid amplification for Mycobacterium tuberculosis complex (MTB) from sputum specimens will be performed routinely on the first two inpatient specimens and on smear positive outpatient specimens. This assay detects all members of the MTB complex as well as the Bacille Calmette-Guerin (BCG) vaccine strain. In addition, this assay detects mutations associated with rifampin resistance which will be reported when detected. Cultures are held for 60 days before a Negative report is issued. Susceptibilities are performed on all Mycobacterium tuberculosis isolates to the 5 primary drugs: isoniazid, ethambutol, rifampin, streptomycin and pyrazinamide.

Mycology--Yeasts and fungi are isolated on selective media. Fungus cultures are held 30 days before a Negative report is issued. However, yeast and fungi are often isolated from routine cultures. Susceptibilities of yeast are provided when isolated from sterile body sites and by request on urine isolates.

Parasitology--Stool specimens submitted appropriately in stool collection kits are processed and examined for the presence of intestinal parasites. Routine Ova and Parasites (O&P) examinations are no longer performed automatically. Instead, a *Giardia lamblia* and *Cryptosporidium* spp. fluorescent antibody assay must first be performed. Once these assays performed, a routine O&P exam must be approved by calling the laboratory. Of note, an O&P exam will not detect *Cryptosporidium*, *Cyclospora*, or *Microsporidia*; separate orders must be placed. In inpatients hospitalized for >3 days consider other etiology for diarrhea such as *Clostridium difficile* toxin.

Molecular Detection--The laboratory utilizes various molecular testing methods to detect the presence of the following organisms: Methicillin Susceptible and Resistant *Staphylococcus aureus* (MRSA), *Streptococcus* Group B, *Chlamydia trachomatis*, *Neisseria gonorrhoeae*, *Trichomonas vaginalis*, HSV 1 and HSV 2, enterovirus in CSF, influenza A and B viruses including subtyping for 2009 H1N1, RSV, adenovirus, coronavirus 229E, coronavirus HKU1, coronavirus NL63, coronavirus OC43, human metapneumovirus, parainfluenza viruses 1-4, rhinovirus/enterovirus, *Bordetella pertussis*, *Chlamydia pneumoniae*, *Mycoplasma pneumoniae* and Human Papilloma Virus. In addition, detection of *Clostridium difficile* toxin is accomplished using amplification

Antibiotic Susceptibility Testing--Performed on clinically significant bacterial isolates when indicated using automated and manual methods.

Virology--Culture for viruses is accomplished by shell vial technology in conjunction with hybrid cell culture followed by viral identification using immunofluorescent methods. Cultures are typically held for 2, 5, or 7 days depending on the virus suspected except for Cytomegalovirus (CMV), which can be held up to 21 days.

Immunology

Autoimmune Serology--Testing is performed in this section of the laboratory M-F; 7:30am-5:00pm. The laboratory provides serologic screening and identification of antibodies associated with autoimmune diseases.

Infectious Disease Serology--The laboratory provides serologic tests for the evaluation of infectious diseases and/or immune status.

Protein Electrophoresis—Full service protein electrophoresis is performed throughout the week by the laboratory. Routine testing includes: quantitation of serum and urine protein fractions; Immunofixation Electrophoresis of gamma globulins in serum, urine or cryoprecipitate.