

## Overview

### Useful For

Diagnosis of urinary tract infections

Quantitative culture results may be helpful in discriminating contamination, colonization, and infection

### Reflex Tests

Test Id	Reporting Name	Available Separately	Always Performed
SIDC	Ident Serologic Agglut Method 4	No, (Bill Only)	No
PCRID	Identification by PCR	No, (Bill Only)	No
COMM	Identification Commercial Kit	No, (Bill Only)	No
RMALD	Ident by MALDI-TOF mass spec	No, (Bill Only)	No
GID	Bacteria Identification	No, (Bill Only)	No
ISAE	Aerobe Ident by Sequencing	No, (Bill Only)	No
REFID	Additional Identification Procedure	No, (Bill Only)	No
SALS	Serologic Agglut Method 1 Ident	No, (Bill Only)	No
EC	Serologic Agglut Method 2 Ident	No, (Bill Only)	No
SHIG	Serologic Agglut Method 3 Ident	No, (Bill Only)	No
STAP	Identification Staphylococcus	No, (Bill Only)	No
STRP	Identification Streptococcus	No, (Bill Only)	No

### Testing Algorithm

When this test is ordered, the reflex tests may be performed at an additional charge.

### Method Name

Conventional Quantitative Culture Technique/Identification of Pathogens Greater Than or Equal to 10,000 cfu/mL

### NY State Available

Yes

## Specimen

### Specimen Type

Urine

### Ordering Guidance

If susceptibilities are also desired order URNS / Bacterial Culture, Aerobic, with Antimicrobial Susceptibilities, Urine.

### Shipping Instructions

Specimen must arrive within 24 hours of collection.

### Necessary Information

Specimen source is required.

### Specimen Required

**Supplies:** Urine Tubes, 10 mL (T068)

**Collection Container/Tube:** Clean, plastic urine collection container

**Submission Container/Tube:** Plastic, 10-mL urine tube

**Specimen Volume:** 1 mL

**Collection Instructions:** Collect a random urine specimen.

**Specimen Stability Information:** Refrigerated 24 hours

### Specimen Minimum Volume

1 mL

### Reject Due To

All specimens will be evaluated at Mayo Clinic Laboratories for test suitability.

### Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
Urine	Varies		

## Clinical & Interpretive

### Clinical Information

Urinary tract infection (UTI) encompasses a broad range of clinical entities that vary in their clinical presentation, degree of tissue invasion, epidemiologic setting, and antibiotic therapy requirements. There are 4 major types of UTIs: urethritis, cystitis, acute urethral syndrome, and pyelonephritis. UTIs may also be classified as uncomplicated or complicated. *Escherichia coli* is the leading cause of uncomplicated community-acquired UTI. Risk factors that predispose one to complicated UTIs include: underlying diseases that are associated with kidney infection (eg, diabetes), kidney stones, structural or functional urinary tract abnormalities, and indwelling urinary catheters. Another classification of UTIs is as upper UTI (related to the kidney, renal pelvis, or ureter) or lower UTI (urinary bladder and urethra). The classic symptoms of upper UTI are fever (often with chills) and flank pain; frequent painful urination,

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urgency, and dysuria are more often associated with lower UTI.

**Reference Values**

No growth (Organism present <10,000 cfu/mL, or mixed flora)  
Identification of probable pathogens with colony count ranges

**Interpretation**

In general, the isolation of more than 100,000 colony-forming units (cfu)/mL of a urinary pathogen is indicative of urinary tract infection (UTI). Isolation of 2 or more organisms above 10,000 cfu/mL may suggest specimen contamination. For specimens contaminated with the usual bacterial flora, bacteria that are potentially pathogenic are identified.

**Cautions**

Although urine is normally sterile, contamination by organisms normally present in the urethra or on periurethral surfaces can allow a proliferation of these organisms yielding misleading urine culture results.

Urine held at ambient temperature for more than 30 minutes supports the growth of both pathogens and contaminants, leading to potentially inaccurate colony counts.

Urine obtained from catheter bags at the bedside and Foley catheter tips are unacceptable for culture.

**Clinical Reference**

1. Forbes BA, Sahm DF, Weissfeld AS: Infections of the urinary tract. In: Bailey and Scott's Diagnostic Microbiology. 12th ed. Mosby; 2007:842-855
2. Miller JM, Binnicker MJ, Campbell S, et al: A guide to utilization of the microbiology laboratory for diagnosis of infectious diseases: 2018 Update by the Infectious Diseases Society of America and the American Society for Microbiology. Clin Infect Dis. 2018 Aug 31;67(6):e1-e94. doi: 10.1093/cid/ciy381
3. Procop GW, Church DL, Hall GS, et al: Introduction to Microbiology Part II: Guidelines for the collection, transport, processing, analysis, and reporting of cultures from specific specimen sources. In: Koneman's Color Atlas and Textbook of Diagnostic Microbiology. 7th ed. Wolters Kluwer Lippincott Williams and Wilkins; 2017:66-110

**Performance****Method Description**

The urine specimen is inoculated onto sheep blood agar and eosin methylene blue (EMB) agar using a calibrated loop. Following 18 to 24 hours of incubation, semiquantitative colony counts are determined and potential urinary pathogens are identified using 1 or a combination of the following techniques: commercial identification strips or panels, matrix-assisted laser desorption/ionization time-of-flight (MALDI-TOF) mass spectrometry, conventional biochemical tests, carbon source utilization, real-time polymerase chain reaction (RT-PCR), and nucleic acid sequencing of the 16S ribosomal RNA (rRNA) gene. Cultures with less than 10,000 colony-forming units (cfu)/mL of a single species are reported as "Organism present less than 10,000 cfu/mL." The presence of commensal flora of the urethra (contaminants) and mixed cultures of organisms present in colony counts less than 10,000 cfu/mL are reported as "mixed flora." (Chan WW: Urine cultures. In: Leber AL, ed. Clinical Microbiology Procedures Handbook. Vol 1. 4th ed. ASM Press; 2016:section 3.12)

**PDF Report**

No

**Day(s) Performed**

Monday through Sunday

**Report Available**

2 to 5 days

**Specimen Retention Time**

1 day

**Performing Laboratory Location**

Rochester

**Fees & Codes****Fees**

- Authorized users can sign in to [Test Prices](#) for detailed fee information.
- Clients without access to Test Prices can contact [Customer Service](#) 24 hours a day, seven days a week.
- Prospective clients should contact their account representative. For assistance, contact [Customer Service](#).

**Test Classification**

This test has been cleared, approved, or is exempt by the US Food and Drug Administration and is used per manufacturer's instructions. Performance characteristics were verified by Mayo Clinic in a manner consistent with CLIA requirements.

**CPT Code Information**

87086-Bacterial Culture, Aerobic, Urine

87077-Identification Commercial Kit (if appropriate)

87077-Ident by MALDI-TOF mass spec (if appropriate)

87077-Bacteria Identification (if appropriate)

87077-Additional Identification Procedure (if appropriate)

87077-Identification Staphylococcus (if appropriate)

87077-Identification Streptococcus (if appropriate)

87147 x 1-3-Serologic Agglut Method 1 Ident (if appropriate)

87147-Serologic Agglut Method 2 Ident (if appropriate)

87147 x 4-Serologic Agglut Method 3 Ident (if appropriate)

87147 x 2-6 - Serologic Agglut Method 4 Ident (if appropriate)

87153-Aerobe Ident by Sequencing (if appropriate)

87150-Identification by PCR (if appropriate)

**LOINC® Information**

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Test ID	Test Order Name	Order LOINC® Value
UR	Bacterial Culture, Aerobic, Urine	630-4

Result ID	Test Result Name	Result LOINC® Value
UR	Bacterial Culture, Aerobic, Urine	630-4