## Lab Dept: Urine/Stool

## Test Name: URINALYSIS REFLEX TO URINE CULTURE

### *General Information*

**Lab Order Codes:** UARC

**Synonyms:** UA Reflex to Culture

**CPT Codes:** 81001 – Urinalysis, automated with microscopy
81003 – Urinalysis, automated without microscopy

For Urine Culture CPT information: See Urine Culture

**Test Includes:** Bilirubin, blood, clarity, color, glucose, ketones, leukocyte esterase, nitrite, pH, protein, specific gravity, and urobilinogen

Reflexive testing for culture will be performed in the following situations:
1. Urine dipstick positive for Nitrites
2. Urine dipstick positive for Leukocyte Esterase (trace or greater)
3. Greater than 5 WBC's on spun urine
4. Greater than 10 WBC's on unspun urine
5. Any urine positive for yeast
6. Any patient less than 2 months old

### *Logistics*

**Test Indications:** Useful as a screen for abnormalities of urine; diagnosing and managing renal diseases, urinary tract infections, urinary tract neoplasms, systemic diseases, inflammatory or neoplastic diseases adjacent to the urinary tract and dehydration.

**Lab Testing Sections:** Urinalysis/Microbiology

**Phone Numbers:** MIN Lab: 612-813-6280

STP Lab: 651-220-6550

**Test Availability:** Daily, 24 hours

**Turnaround Time:** UA: 2 hours
UC: Preliminary report in 1 day, final report within 1-5 days

**Special Instructions:** Send to lab within 30 minutes of collection

### *Specimen*

**Specimen Type:** Urine

**Container:** Urine cup

**Draw Volume:** Prefer 10 mL urine (Minimum: 2-4 mL may limit extent of testing)

**Processed Volume:** Entire volume submitted

**Collection:** A specimen collected by catheterization is optimal; however, a clean-catch or mid-stream specimen is also acceptable. Random, voided specimens will be accepted, but are the least desirable and are **not** recommended if a urine culture is also being requested. In all cases, a first morning specimen is most desirable. If testing will be delayed for more than one hour, refrigerate upon collection, stable for up to 24 hours.

**Special Processing:** N/A

**Patient Preparation:** Collect a clean-catch urine specimen as follows:

Males: Clean glans with soap and water. Rinse area with wet gauze pads. While holding foreskin retracted, begin voiding. After several mLs have passed, collect midstream portion without stopping the flow of urine. Place the cap on the cup and **tighten securely**. Send to the lab immediately, or refrigerate specimen until it can be sent.
Females: Thoroughly clean urethral area with soap and water. Rinse area with wet gauze pads. While holding labia apart, begin voiding. After several mLs have passed, collect midstream portion without stopping the flow of urine. Place the cap on the cup and **tighten securely**. Send to the lab immediately, or refrigerate specimen until it can be sent.

**Note:** Indicate type of specimen (catheterized or void) and time of collection on the label.

**Sample Rejection:** Contamination with feces; urine in cotton balls; specimen decomposition; bacterial overgrowth; mislabeled or unlabeled specimens; specimens not refrigerated within one hour of collection (verified by laboratory); specimens >24 hours old.

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***Interpretive***

**Reference Range:**

| **Urine Chemistries:** | |
|---|---|
| **Blood:** | Negative |
| **Bilirubin:** | Negative |
| **Clarity:** | Clear to slightly hazy |
| **Glucose:** | Negative |

| | | |
|---|---|---|
| **Ketones:** | Negative | |
| **Leukocyte esterase:** | Negative | |
| **Nitrite:** | Negative | |
| **pH:** | 5 – 8 pH units | |
| **Protein:** | Negative | |
| **Specific gravity:** | 0 – 1 yr: | 1.002 – 1.006 |
| | >1 yr: | 1.001 – 1.030 |
| **Urobilinogen:** | 0.1 – 1.0 Ehrlich Units | |
| **Microscopic:** | | |
| **RBC:** | 0 – 3 /HPF | |
| **WBC:** | 0 – 5 /HPF | |
| **Epithelial cells:** | Few (Squamous Only) | |
| **Casts:** | 0 – 2 hyaline casts/LPF | |
| **Crystals:** | Few Calcium oxalate; few amorphous urates or phosphates | |
| **Mucus:** | None to slight | |
| **Bacteria:** | None to few/hpf (none for catheterized specimens) | |
| **Yeast:** | None | |
| **Urine Culture Reference Info:** See Urine Culture | | |

**Critical Values:** N/A

**Limitations:**

Insufficient volume, <2 mL, may limit the extent of procedures performed. Metabolites of Pyridium® may interfere with the dipstick reactions by producing color interference. High Vitamin C intake may cause an underestimate of glycosuria, or a false-negative nitrate test. Survival of WBS's is decreased by low osmolality, alkalinity and lack of refrigeration. Formed elements in the urine including casts disintegrate rapidly; therefore the specimen should be analyzed as soon as possible after collection. Specific gravity is affected for glycosuria, mannitol infusion, or prior administration of iodinated contrast material for radiologic studies. False-positive tests for protein can also be due to contamination of the urine by an ammonium-containing cleansing solution.

Because the pH of freshly excreted urine does not reach a pH of 9 in normal or abnormal conditions, a pH of 9.0 is associated with improperly preserved specimen and indicates that a fresh specimen should be obtained to ensure validity of the results. If a pH is found to be above 9.0, the following comment will be appended to the result, "Specimen quality is questionable due to high pH, suggest recollect."

For Urine Culture: See Urine Culture

**Methodology:**

Aution 9EB test strip with AX-4030 utilizing reflectance spectroscopy
Mutlistix© SG and light microscopy
For Urine Culture: See Urine Culture

**References:**

Howaritz PJ, et al (1977) Timeliness of Urinalysis, Arch Path Lab Medicine, Vol 122: 667-671

Strasinger S (1989) Urinalysis and Body Fluids 2nd ed, FA Davis Company

Brunzel N (1994) Urine and Body Fluid Analysis, WB Saunders Company

Ringsrud K, et al (1995) Urinalysis and Body Fluids: A Color Text and Atlas, Mosby

For Urine Culture: See Urine Culture

**Updates:**

3/20/24: New instrumentation and volume requirements (2-4 mL min.)