

Diagnostic update

Rapid, reliable urine culture results—and a new addition to our urine offering

Bacterial urinary tract infections (UTIs) are a common diagnosis in veterinary patients. A quantitative urine culture with minimum inhibitory concentration (MIC) antimicrobial susceptibility testing is recommended to confirm bacteriuria and guide antimicrobial selection. Timely and accurate culture results are essential for successful management of this often-painful condition. IDEXX Reference Laboratories uses leading-edge technology that will reduce uncertainty by providing rapid urine culture results, with negative results reported in less than 24 hours. For more than 99% of patients, the IDEXX Urine Culture provides accurate and timely results.¹ For the rare cases requiring extended incubation, we are introducing a new test code.

Optimizing UTI management

- + Confirm infection and guide treatment: A quantitative urine culture with MIC susceptibility testing is the gold standard for diagnosing urinary tract infections in more than 99% of patients and selecting the most effective antimicrobial.
- + Rapid turnaround for better care: IDEXX delivers fast results. Negative cultures are reported in under 24 hours, and positive results are reported in 24–48 hours, helping you make timely clinical decisions.
- + Evidence-based protocols: IDEXX follows validated incubation procedures to ensure accuracy and reduce the risk of environmental contamination.
- + New test for complex cases: A specialized urine culture is now available for rare cases when slow-growing pathogens, such as *Corynebacterium urealyticum*, are suspected.

Fast and accurate urine culture results

IDEXX uses matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF) technology in our reference laboratories for more rapid microbial identification compared to traditional bench methods. This technology can identify organisms to the species level, resulting in more specific and accurate identifications. With this advanced technology, combined with improved workflows in the laboratory, your urine culture results will be available within 24–48 hours, allowing you to communicate to clients and treat your patients with an appropriate antimicrobial faster.

Improvements to IDEXX urine culture protocols allow detection even in specimens with lower bacterial concentrations. Standard urine culture incubation times meet the diagnostic needs of over 99% of patients, reliably providing negative results within 24 hours.¹ This approach minimizes the risk of environmental contaminant growth and supports an accurate diagnosis, allowing you to provide the best possible care to patients with lower urinary tract signs.

Standard urine culture provides reliable results in over 99% of cases

In human medicine, it is recommended that a urine culture be reported negative if no growth is present following 18–24 hours of incubation.^{1–4} IDEXX Reference Laboratories performed several internal studies¹ to determine the optimal time point for reporting no-growth results.

Prospective study

- + Total cultures evaluated: 4,102 (from U.S. and Canadian IDEXX labs).
- + Initial plate review at 24 ± 2 hours, final plate review at 48 ± 2 hours.

Key findings

- + >99.85% of cultures that were negative at 24 hours remained negative at 48 hours.
- + 6 cultures (0.15%) showed light growth at 48 hours after being negative at 24 hours.
- + 15 cultures (0.4%) developed environmental contaminant growth by 48 hours.

Conclusion

- + Standard urine culture protocols provide the most accurate results for the vast majority of patients, with 24-hour incubation maintaining sensitivity.
- + Extended incubation may reduce specificity due to the growth of environmental contaminants.

New urine culture option offered by IDEXX Reference Laboratories

While most urinary pathogens grow within 24 hours, there are rare cases when a slow-growing organism is suspected. IDEXX is introducing a new urine culture option for patients with suspected cystitis from uropathogenic corynebacteria or other

slow-growing uropathogens. While uncommon, uropathogenic corynebacteria are emerging as a cause of refractory cystitis in both humans and animals. Although these organisms will sometimes grow in 24 hours, they often require longer incubation times for detection. Specimens submitted for Urine Culture—Uropathogenic Corynebacteria (test code CORYN) will be incubated for 72 hours, allowing for identification of slow-growing bacteria that can infect the urinary tract.

Submission of urine to evaluate for corynebacteria should be considered in both dogs and cats in the following situations:^{5,6}

- + Clinical signs of lower urinary tract disease with alkaline urine (pH > 7.0) and often the presence of struvite crystals or calculi
- + Evidence of encrusting cystitis or pyelitis: deposits of superficial and intramucosal ammonium magnesium phosphate (struvite) crystals along inflamed tissue
- + History of previous urological procedures (e.g., cystotomy, catheterization), implants (e.g., urethral stents), or micturition disorders (e.g., urinary incontinence, urine retention)
- + History of recurrent urinary tract infections

It is important to note that species of *Corynebacterium* can be considered normal flora of the skin and urethra and can be isolated from clinically healthy dogs.⁷ *Corynebacterium* species of importance for cystitis include *C. urealyticum*, *C. jeikeium*, *C. renale*, and *C. cystitidis*. On urine cultures submitted to IDEXX Reference Laboratories, pathogenic corynebacteria isolated from the urinary tract will be reported with their species name (e.g., *C. urealyticum*). Nonpathogenic corynebacteria will be reported as *Corynebacterium* spp., and there will be a comment that they are a nonpathogenic species and that antimicrobial therapy is not indicated.

Fast reporting of urine culture results means improved care for your patients. The addition of extended incubation options for detecting rare, slow-growing pathogens, like uropathogenic corynebacteria, further enhances diagnostic precision, supporting better outcomes in complex cases.

References

1. Data on file at IDEXX Laboratories, Inc. Westbrook, Maine USA: *Reporting of negative urine cultures following overnight incubation* [white paper 09-82144-00].
2. Graham JC, Galloway A. ACP Best Practice No 167: the laboratory diagnosis of urinary tract infection. *J Clin Pathol*. 2001;54(12):911–919. doi:10.1136/jcp.54.12.911
3. Cavagnolo R. Evaluation of incubation times for urine cultures. *J Clin Microbiol*. 1995;33(7):1954–1956. doi:10.1128/jcm.33.7.1954-1956.1995
4. Urine specimen processing. In: *Procedures/Guidelines for the Microbiology Laboratory*. Saskatoon, SK: College of Physicians and Surgeons of Saskatchewan Laboratory Quality Assurance Program; 2010:15–17.
5. Maurey C, Boulouis HJ, Canonne-Guibert M, Benckekroun G. Clinical description of *Corynebacterium urealyticum* urinary tract infections in 11 dogs and 10 cats. *J Small Anim Pract*. 2019;60(4):239–246. doi:10.1111/jsap.12973.
6. Bailiff NL, Westropp JL, Jang SS, Ling GV. *Corynebacterium urealyticum* urinary tract infection in dogs and cats: 7 cases (1996–2003). *JAVMA*. 2005;226(10):1676–1680. doi:10.2460/javma.2005.226.1676.
7. Ling GV, Ruby AL. Aerobic bacterial flora of the prepuce, urethra, and vagina of normal adult dogs. *Am J Vet Res*. 1978;39(4):695–698.

Ordering information

| Test code | Test name and contents |
|--------------|---|
| UCUL | Urine Culture Aerobic urine culture with organism ID when appropriate and susceptibility if indicated. |
| UNAUC | Urinalysis with IDEXX Cystatin B Test and Urine Culture Urinalysis: physical, chemical, and microscopic analyses. Aerobic urine culture with organism ID when appropriate and susceptibility if indicated. Also includes the IDEXX Cystatin B Test (canine/feline only). Note: Urine culture is performed regardless of findings of urinalysis. |
| CORYN | Urine Culture—Uropathogenic Corynebacteria Aerobic urine culture with extended incubation for uropathogenic corynebacteria. Includes organism ID when appropriate and susceptibility if indicated. |

Specimen requirements: 5 mL urine in a sterile container (collection by cystocentesis and submission in a nonadditive tube, WTT preferred).

Turnaround time: 2–4 working days if culture positive; negative results reported in 1–3 days. For test code CORYN, the turnaround time is 4–6 days if culture positive; negative results reported in 4–5 days. Results for urinalysis and the IDEXX Cystatin B Test are reported by 8:00 a.m.

Ordering your tests online

Did you know that you can search for diagnostic tests, create requisitions, and review status and results on vetconnectplus.ca?

Contacting IDEXX

For questions regarding specimen submissions or test results, please contact our Laboratory Customer Support Team at **1-800-667-3411**.

Additional resources

For guidance on the diagnosis and management of urinary tract infections, visit idexx.ca/UrineBacteria.

To learn more about how to use your urine culture MIC susceptibility results to select the best antimicrobial for your patient, visit idexx.ca/MIC.