

Acutis Reveal™ UTI urinary tract infection test

The simple truth: UTI in the elder population accounts for more than 120,000 hospital admissions annually in the US. Clinicians in long-term care facility settings require faster and more accurate test results for urinary tract infections. They also want actionable data that prevents misdiagnoses and subsequent inappropriate use of antibiotics. Currently, 22% of UTIs are undetected with traditional culture-based testing, and culture alone is not enough to track true incidence of symptomatic UTI.¹

The good news: these higher quality results are achievable with **Acutis Reveal™**, a New York State-approved process made available by a company known for delivering on its promises. **Acutis Reveal™ UTI can detect 31 major urinary tract pathogens.** This non-invasive test screens for infectious bacteria and fungi as quickly as **the same day the sample reaches our lab**, followed by antibiotic sensitivity testing (AST) information.

	Acutis Reveal™ UTI	Point of care (in-office)	Urine culture
Sensitivity	96-100%	75%*	50-95%
Specificity	100%	50%*	85-99%
Additional confirmation requirements	No	Yes	No
Tests for bacterial & fungal pathogens	Yes	No	Yes
Number of pathogens tested	31	None	Variable
Polymicrobial infection detection	Yes	No	Possible
Detection turnaround time**	Within 24 hours of sample receipt	Instant	72 hours

* Percentage indicates sensitivity and specificity for the presence of leukocyte esterase and nitrites.

** Results for AST will take longer

Detection: our laboratory-developed test detects 31 major urine tract pathogens.

UTI	Gram negative organisms	<i>Acinetobacter baumannii</i> <i>Aerococcus urinae</i> <i>Citrobacter freundii</i> <i>Citrobacter koseri</i> <i>Corynebacterium riegelii</i> <i>Enterobacter aerogenes</i>	<i>Enterobacter cloacae</i> <i>Escherichia coli</i> <i>Klebsiella oxytoca</i> <i>Klebsiella pneumoniae</i> <i>Morganella morganii</i>	<i>Pantoea agglomerans</i> <i>Proteus mirabilis</i> <i>Providencia stuartii</i> <i>Pseudomonas aeruginosa</i> <i>Serratia marcescens</i>
	Gram positive organisms	<i>Enterococcus faecalis</i> <i>Enterococcus faecium</i> <i>Staphylococcus aureus</i> <i>Staphylococcus epidermidis</i>	<i>Staphylococcus haemolyticus</i> <i>Staphylococcus lugdunensis</i> <i>Staphylococcus saprophyticus</i> <i>Streptococcus oralis</i>	<i>Streptococcus pasteurianus</i> <i>Streptococcus pyogenes</i> <i>Streptococcus agalactiae</i> <i>Streptococcus anginosus</i>
	Fungi	<i>Candida albicans</i>	<i>Candida glabrata</i>	<i>Candida parapsilosis</i>

Treatment: we then inform your course of treatment with antibiotic sensitivity information.



Simultaneous detection and identification of >90% of the bacteria and fungal pathogens responsible for UTI



Delivery of 95% of pathogen detection results the same day we receive the sample



Treatment insight with antibiotic sensitivity report

Why choose Acutis Reveal™ for long-term care facilities?

The problem: The National Institute of Health calls urinary tract infections a “pervasive and persistent problem,” citing that “urinary tract infections (UTIs) are among the most common bacterial infections, affecting **150 million people worldwide** each year.” Not only is this problem common, but it is also difficult to accurately diagnose and treat. The diagnosis of UTI in elderly patients in particular “can be problematic, as these patients are less likely to present with a typical clinical history and localised urinary symptoms compared with younger patients.”² Rising antimicrobial resistance among uropathogenic bacteria further complicates therapeutic decisions,³ potentially driving the patient to take incorrect or unnecessary antibiotics, while continuing to suffer longer.

Our solution: Acutis Reveal™ urinary tract infection (UTI) test. Our PCR molecular test offers a new, proven, state-of-the-art technique to diagnose urinary tract infections and the specific causative gram negative or gram positive pathogens responsible for the majority of UTIs. Acutis Reveal™ can identify pathogens faster and with greater accuracy than any traditional methods or procedures, providing the certainty clinicians require to provide the most efficient, efficacious, and economical patient care.

- **Determination of whether or not a condition is a result of a polymicrobial infection, in a one-step process.** Many recurring UTIs are results of polymicrobial infection, and oftentimes, traditional testing methods may identify one pathogen present, but not all. **Reveal™** provides the necessary etiological distinctions in our results, determining the specific bacterial and fungal pathogens present, which allows medical providers to take a more specific course of treatment action.

- **Identification of the most common causative agents of urinary tract infection: pathogens belonging to the Enterobacteriaceae bacterial group.** Failure to identify and treat infection-causing Enterobacteriaceae pathogens may lead to cystitis (bladder infection) or even nephritis (kidney infection). Further failure to treat the infection may lead to urosepsis, a sepsis caused by the bacteria entering the bloodstream. **Reveal™’s** identification of specific pathogens like those from the Enterobacteriaceae family can stop patients from heading down this dangerous path.

- **Further insights through antibiotic sensitivity testing (AST) that enable clinicians to define the right course of treatment for an infection.** Patients suffering from a symptomatic UTI are commonly treated with antibiotics, but this treatment is oftentimes incorrect or unnecessary. With our AST insights, practitioners are assured that their clinical decisions are accurate and necessary.

- Ampicillin, amoxicillin, and sulfonamides are no longer the drugs of choice for empirical treatment because of the **widespread emergence of resistance** in 15–20% of *E. coli* in several areas of the US.⁴ An additional 30% of urinary isolates of *E. coli* are now resistant to trimethoprim.⁵ These incorrect treatments can result in “long-term alteration of the normal micro-biota of the vagina and gastrointestinal tract and in the development of multidrug-resistant microorganisms.”

- “The availability of niches that are no longer filled by the altered microbiota can increase the risk of colonization with multidrug-resistant uropathogens.”⁶

- This practice renders antibiotic solutions less effective or ineffective completely, potentially leading to “frequent recurrences, pyelonephritis with sepsis, renal damage in young children, pre-term birth and other complications caused by frequent antimicrobial use.”⁷

Please note, each test should only be ordered when deemed to be reasonable and medically necessary.

¹ Wojno, Kirk J. et al. “Multiplex PCR Based Urinary Tract Infection (UTI) Analysis Compared to Traditional Urine Culture in Identifying Significant Pathogens in Symptomatic Patients.” *Urology* vol. 136 (2020): 119-126. doi:10.1016/j.urology.2019.10.018

² Lutters M, Vogt-Ferrier NB. Antibiotic duration for treating uncomplicated, symptomatic lower urinary tract infections in elderly women. *Cochrane Database Syst Rev* 2008;(3):CD001535. doi:10.1002/14651858.CD001535.pub2. PMID:18646074

³ McLellan, Lisa K, and David A Hunstad. “Urinary Tract Infection: Pathogenesis and Outlook.” *Trends in molecular medicine* vol. 22,11 (2016): 946-957. doi:10.1016/j.molmed.2016.09.003

⁴ Gupta K, Scholes D, Stamm WE. Increasing prevalence of antimicrobial resistance among uropathogens causing acute uncomplicated cystitis. *J Am Med Assoc.* 1999;281:736–8

⁵ NICE. **Guidelines: Urinary tract infection (lower): antimicrobial prescribing:** National Institute for Health and Care Excellence:34

⁶ Kostakioti M, Hultgren SJ, Hadjifrangiskou M. Molecular blueprint of uropathogenic *Escherichia coli* virulence provides clues toward the development of anti-virulence therapeutics. *Virulence.* 2012;3:592–594.

⁷ Nielubowicz GR, Mobley HL. **Host–pathogen interactions in urinary tract infection.** *Nature Rev Urol.* 2010;7:430–441. This review compares the strategies used by two important uropathogens, *E. coli* and *P. mirabilis*, the host response to each pathogen, and the current treatments and therapies to prevent UTIs.

To learn more



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