

## Diagnosing UTIs in Dogs



Bacterial culture with antimicrobial sensitivity testing is considered the criterion-referenced standard for UTI diagnosis in dogs, but it takes days and can be costly. The goal of this study was to evaluate diagnostic accuracy of a point-of-care rapid immunoassay (RIA) compared with bacterial culture for detecting UTIs in dogs.

Canine urine samples ( $n = 200$ ) were tested using the RIA kit as well as routine bacterial culture and susceptibility testing. Potential culture outcomes included negative, gram-positive, or gram-negative bacterial identification. RIA testing outcomes included negative, gram-indeterminate, or gram-negative.

Bacterial growth using culture methods was positive for 56/200 (28%) urine samples; 38 (19%) of these were likely associated with bacterial UTI based on sample collection method and bacterial culture. The RIA test was shown to have 97.4% sensitivity and 98.8% specificity for detecting samples likely associated with UTI. There was substantial agreement between bacterial culture and RIA outcome for UTI.

The authors noted that the RIA test lacks antimicrobial sensitivity analysis and therefore cannot be substituted for bacterial culture and susceptibility testing. However, the test can quickly provide information about the organisms (gram-negative or gram-indeterminate) involved in a bacterial UTI, which may improve the clinician's ability to choose appropriate empirical therapy. \*This study was supported by Silver Lake Research Corp.

### Global Commentary

Using this point-of-care RIA could allow clinicians to diagnose (or rule out) a UTI within 20 minutes and provide potentially useful information. The study was not designed to determine the RIA accuracy for various bacterial species. However, guidance for treatment would likely be more applicable to tests positive for gram-negative bacteria, as the positive results for gram-intermediate bacteria could have contained either gram-positive or gram-negative bacteria. In this study, 94% of urine samples were collected via cystocentesis, the preferred urine-collection method for culture. Low numbers of samples were collected via catheterization and voiding, and even fewer were considered positive for UTI; therefore, RIA results for urine collected by means other than cystocentesis should be interpreted cautiously.—Gregory F. Grauer, DVM, MS, DACVIM (SAIM), Kansas State University

### Source

Jacob ME, Crowell D, Fauls MB, Griffith EH, Ferris KK. Diagnostic accuracy of a rapid immunoassay for point-of-care detection of urinary tract infection in dogs. *Am J Vet Res.* 2016;77(2):162-166.

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