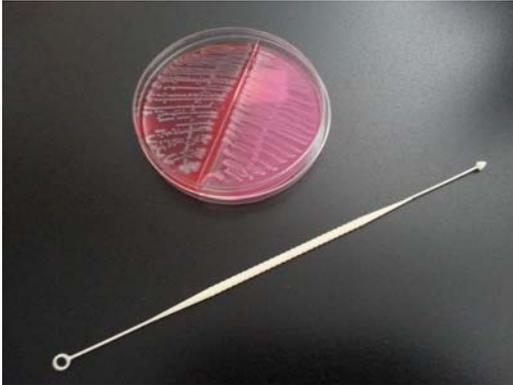




Did You Know?

Urine Culture & Susceptibility



10 ul calibrated loop alongside a blood/MacConkey agar biplate inoculated with a urine sample.

Our microbiology department does more urine cultures than any other culture. To achieve the most from a urine culture, we offer the following tips.

Submission of Urine Samples: The optimal urine sample for culture and sensitivity is one taken by cystocentesis. A cystocentesis sample is less affected by contamination. However, depending on the clinical work up, a veterinarian may choose to submit a urine sample gathered by catheterization or clean free catch. It is important to note method of collection on the test request form. Urine for culture should be submitted in a clear top tube (CTT). The plastic red top tubes have a crystal-

line additive that activates clotting of blood for serum harvesting and should not be used. Refrigerate the urine sample after collection to inhibit growth of contaminants. When urine is submitted for a urinalysis at Phoenix, a small amount of urine is routinely saved before centrifugation in case the clinic later adds on a urine culture.

Submission of culture plates: Urine is the optimal sample for culture and sensitivity. However, culture plates, thioglycolate (thio) broth or swabs of urine can also be submitted. Quantitation of bacterial growth, expressed as colony forming units (CFU)/uL, is used to distinguish contamination from true infection, particularly in those samples gathered by catheterization and free catch. Colony counts are possible only if a calibrated loop is used to inoculate a known quantity of urine on the plate or broth.

Calibrated loops: 10 uL disposable calibrated loops in bags of 25 are available for a nominal charge. Blood agar plates (sleeve of 10) and blood agar/MacConkey plates (sleeve of 10), are also available for purchase. To inoculate the plate using the loop, dip the loop into the urine and lay it flat on the agar at the top of the plate or section. With the loop then turned sideways, draw a fine line of urine down the plate. Finally, to distribute the bacteria colonies across the plate, take the loop again on its edge and make a zig zag motion roughly 10 times across the streak of urine down the plate. Thio broths are inoculated by dipping the loop into the urine, then once into the broth medium. Colony counts of bacteria can be provided on submission of a culture plate IF the clinic uses a calibrated loop, and specifies which calibrated loop was used. By inoculating culture medium in clinic and incubating it properly, the clinic need only send positive cultures along for culture and sensitivity saving money when cultures are negative.

Test code for urine culture ID and sensitivity is 506 whether the sample being submitted is urine, culture plate, or thio tube.



Did You Know? Urine Culture & Susceptibility

Urine Culture/Sensitivity at Phoenix: When a urine sample is submitted for culture, a calibrated loop is used to inoculate a blood agar plate, blood/MacConkey agar biplate (to help isolate gram negative bacteria) and CNA (Columbia Naladixic Acid) agar plate (to isolate gram positive bacteria). Cystocentesis samples will also be inoculated into thio broth. Urine cultures plates, and thio broth if present, are evaluated at one and two days, with a preliminary and final culture report given. If bacteria are grown, sensitivities will be given for the top two bacteria isolated. A clinic can call and request sensitivities on other bacteria for an additional charge. Any growth seen in the thio broth will be plated on culture media and reviewed.

Sensitivity panels: Depending on culture results, an organism will be tested against a standard antibiotic panel or extended antibiotic panel. Phoenix routinely determines antibiotic sensitivities by Mean Inhibitory Concentration (MIC). Occasionally antibiotic sensitivities are tested by Kirby Bauer disc diffusion.

A word about correlating urinalysis with urine culture: The Phoenix microbiology department now reviews the results of the urine culture results with the urinalysis to assure that the results are consistent. This is particularly important when correlating the finding of bacteria on the urine sediment review with the culture results. Occasionally bacteria are seen that do not grow on culture and a gram stain may be done to assess the reported bacteria. Sometimes we find organisms in low numbers such as clostridium that are not urinary pathogens. If there are large numbers of WBCs in the urine, bacteria that are observed may not be viable and a negative culture may result.

It is very helpful if clinics list the results of their in-clinic urinalysis on the test request form when urine culture only, and not UA, is submitted to Phoenix.

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