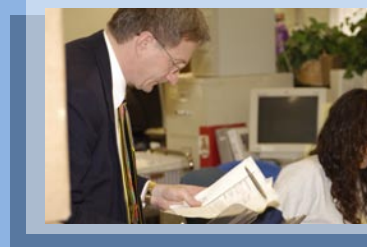


STERLING NEWS & NOTES

A Technical Update from Sterling Reference Laboratories
Your Complete Drug Testing Resource!



Artificial Urine Test – Now a Reality!

Second Quarter 2010

Since drug testing became commonplace, donors, concerned about testing positive for alcohol or illegal drugs have devised numerous schemes to thwart detection. These include dilution of urine specimens, adding exogenous substances (adulterants) to specimens to interfere with the testing process and the substitution of some substance in place of the donor's own urine. These topics have been covered in some detail in previous issues of the STERLING Newsletter and will not be discussed here.

In the Fall 2008 STERLING Newsletter, we discussed the issue of substitution of artificial or synthetic urine in place of the "real deal". Artificial urines are man made solutions formulated to resemble normal human urine in that they contain creatinine, the pH is adjusted to normal urine pH, yellow dye or food coloring is added to mimic the appearance of normal urine and they contain electrolytes and other constituents of human urine. Since they do not contain alcohol or illicit drugs they are "guaranteed" to produce negative test results. They are available for sale at a variety of sources including the internet, magazines and at "head shops" under very clever brand names such as 'Quick Fix', "Ultra Pure", "Clear Test", and "Clear Choice Sub Solution" to name a few. The artificial urines are supplied in either solution form or as a powder to be reconstituted with water. They are also supplied with chemical heat packs to maintain normal body temperature. Since normal urine exhibits a wide range of color and odor, visual and olfactory examination of artificial urine is usually unremarkable. The standard specimen validity tests, creatinine, pH and nitrites or oxidants are all normal. In most states it is not illegal to sell, distribute or possess synthetic urines, although probation and parole departments and treatment centers may elect to sanction individuals caught using them. The manufacturers of the artificial urine do, however, include a warning that their products should not be used for illegal purposes.

At the time of the 2008 Newsletter we did not have available a reliable, inexpensive test that could detect artificial urine. Based on numerous inquiries from our clients and a growing concern that the use of artificial

urine was becoming very prevalent, STERLING set out to develop a test capable of distinguishing artificial urine from normal human urine. Four different artificial urines were purchased over the internet and subjected to a variety of biochemical test to determine if any analytes were absent or present in very abnormal concentrations and could serve as biomarkers for artificial urine. Initially we tested twelve different analytes and chose three to survey a large number of specimens. We tested 594 non-observed, randomly collected urine specimens that were collected for employment purposes. Of these samples, 34 or 5.7% were determined to be artificial based on the test results for one of the analytes. These results were absolutely astonishing. We knew that the problem of artificial urine existed but we were surprised at the magnitude. In all other respects these samples appeared normal – drug test results were negative and routine specimen validity tests including creatinine and pH were within normal limits. STERLING's experience with artificial urine is not unique; the June 15, 2010 edition of the OREGONIAN describes a Portland, Oregon laboratory's encounter with artificial urine.

We suspect, but have no data currently, that the actual prevalence of artificial urine substitution may be even higher when specimens from sources other than employment are tested. In the samples cited above, all the collections were non-observed so substitution was fairly easy to accomplish. This problem can exist in observed collections as well, as small bottles or vials of artificial urine can be hidden in clothing and unless the observer is very diligent, could easily be introduced into the specimen cup.

In addition to the substitution of artificial urine, we have observed many clever and some not so clever attempts of substitution for human urine. Apple juice, which is sometimes diluted to mimic the appearance of urine, is a frequently encountered substitute for urine. It can, however, be readily detected by appearance and odor and taste (*just kidding*). Mountain Dew, a popular soft drink is also frequently found as a substitute. It can be detected with routine specimen validity tests, since it lacks creatinine. Salt water, sugar water and even tap water are common substitutes for urine.

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Artificial Urine Test – Now a Reality! (Continued)

The artificial urine test can be ordered as a routine drug tests either individually or as a component of a drug testing panel and it can be requested as an add-on test.

Test results for the artificial urine test (AUT) will be reported as “Specimen is NOT CONSISTENT with normal human urine” or “Specimen is CONSISTENT with normal human urine”. A note of caution, this test cannot distinguish if the specimen is of non-human origin or if it is human urine from another person. Even with the new test, the most effective way to prevent substitution is still a diligent, observed collection. This includes carefully monitoring the temperature indicator strip on the specimen vial, specimens out of range should be discarded and a new specimen collected immediately.

For further technical information, please contact Dr. Bert Toivola, or one of our other certifying scientists. Contact the sales department at STERLING to add this test to your profile.

Prior to ordering

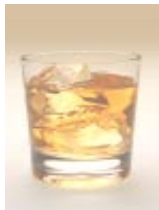
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Call our Sales Department Today, to see if we can save you money!

STERLING Reference Laboratories commitment to quality and service provides great opportunities for well qualified and skilled people. If you know of anyone who would compliment our team, please refer them to us. Thank you!

STERLING Reference Laboratories is full-service, nationally renowned toxicology laboratory, testing for drugs of abuse, which has been serving its clients with superior service and unsurpassed quality since 1987. SRL is certified by Health and Human Services (SAMHSA) and the College of American Pathologists Laboratory Accreditation Program (CAP) – rigorous laboratory standards designed to ensure quality testing.

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