Urine Validity Testing Information

Comprehensive Lab Services, LLC. (CLS) performs specimen validity testing on all urine samples received at our testing lab. Oral fluid samples do not undergo validity testing due to the low probability of adulteration based on collection methodology used. Validity testing is the analysis of a sample to determine if urine has been altered with the addition of foreign substances, if it has been swapped with a different fluid, or if it has been diluted. Comprehensive Lab Services tests for this via 4 methods: urine creatinine, pH, specific gravity, and oxidant detection.

Urine Creatinine

- **Waste product produced by the body that is excreted out in the urine**
- **Normal human creatinine levels are above 20 mg/dL**
- **Results of 0-2 mg/dL are considered to not be human urine**
- **Medications, and some medical problems (diabetes) might cause low creatinine levels**
- ***Reference range for this test is 37 mg/dL – 300 mg/dL***

pH

- **pH testing determines how acidic or alkaline a solution is**
- **Normal human pH of urine is between 5 to 8**
- **Medications, diet, and some medical problems (diabetes, kidney disease) might cause fluctuations outside this normal range**
    - **Diet containing high amounts of vegetables, fruits, or dairy products can increase pH of urine**
    - **Diet containing high amounts of meat, or cranberries can lower pH of urine**
- ***Reference range for this test is pH 5-8***

References:

National Institute of Health
Axiom Diagnostics
DHHS (Department of Health and Human Services)

Specific Gravity

- **Tells concentration of all chemical particles dissolved in the sample**
- **Normal urine has a specific gravity ≥ 1.003**
- **Samples with a urine creatinine ≤ 20 mg/dL and a specific gravity < 1.003 are considered to be diluted**
- **Samples with a urine creatinine ≤ 5 mg/dL and a specific gravity ≤ 1.001 or ≥ 1.020 are considered to be substituted with a foreign material (soap, apple juice, tea, etc.)**
- ***Reference range for this test is 1.005 – 1.019***

Oxidant

- **Determines presence of oxidizing agents that have been added to sample**
- **Many commercially available substitution and adulterating products can be detected with this methodology**
- **Assay determines presence of any of the following oxidizing agents, *which are not individually identifiable*:**
    - **Peroxide**
    - **Peroxidase**
    - **Potassium Iodate**
    - **Chromate (VI)**
    - **Iodic Acid**
    - **Fluoride**
    - **Nitrite**
    - **Iodine**
    - **Sodium Hypochlorite**
    - **Bleach**
- ***Reference range for this test is 0-200 mg/L for all substances listed above***

Any urine sample received that lies outside of the above reference ranges will be flagged as "Validity Tests: Outside of Reference Range."

References:

National Institute of Health
Axiom Diagnostics
DHHS (Department of Health and Human Services)