



ARBOR ASSAYS
Interactive Assay Solutions™

VOLUME & NORMALIZATION ASSAY KITS

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ORDERING

- Online:** www.ArborAssays.com/order-form
- Phone:** Call 734-677-1774 or Toll Free: 855-677-1774. Monday-Friday 8:30 am to 5:30 pm, EST.
- Fax:** Send faxes to 734-677-6860.
- E-mail:** Send E-mail orders to Orders@ArborAssays.com
- Distributors:** Check our website at www.ArborAssays.com/distributors for a list of distributors.
- Mail:** Arbor Assays Inc., Sales Order Entry
1514 Eisenhower Place, Ann Arbor, MI 48108-3284, USA.

Creatinine Urinary Detection Kits/Solutions

Kit: K002-H1 (2 Plate) | K002-H5 (10 Plate)

Solutions: X116-100ML (10 mg/dL) | X120-25ML (20 mg/dL)

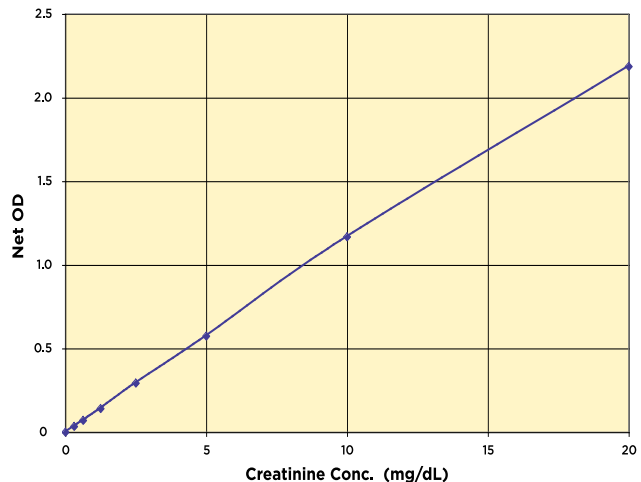
FEATURES

- ▶ Use Urine Volume Marker
- ▶ Sample Urine
- ▶ Calibrated NIST Standard Reference #914a
- ▶ Species Species Independent
- ▶ Time to Answer 30 Minutes
- ▶ Format 96-Well
- ▶ Samples/Kit 88 or 472 in Duplicate
- ▶ Stability Liquid 4°C Stable Reagents
- ▶ Readout Colorimetric, 450 nm



SCIENTIFIC RELEVANCE

Creatinine (2-amino-1-methyl-5H-imadazol-4-one) is a metabolite of phosphocreatine (p-creatine), a molecule used as a store for high-energy phosphate that can be utilized by tissues for the production of ATP. Creatine either comes from the diet or is synthesized from the amino acids arginine, glycine, and methionine. This occurs in the kidneys and liver, although other organ systems may be involved and species-specific differences may exist. Creatine and p-creatine are converted non-enzymatically to the metabolite creatinine, which diffuses into the blood and is excreted by the kidneys. Creatinine forms spontaneously from p-creatine. Under normal conditions, its formation occurs at a rate that is relatively constant and as intra-individual variation is <15% from day to day, creatinine is a useful tool for normalizing the levels of other molecules found in urine. Additionally, altered creatinine levels may be associated with conditions that result in decreased renal blood flow such as diabetes and cardiovascular disease.



Hemoglobin Colorimetric Detection Kits

High Sensitivity: K013-HX1 (2 Plate) | K013-HX5 (10 Plate)

Regular: K013-H1 (2 Plate)

FEATURES

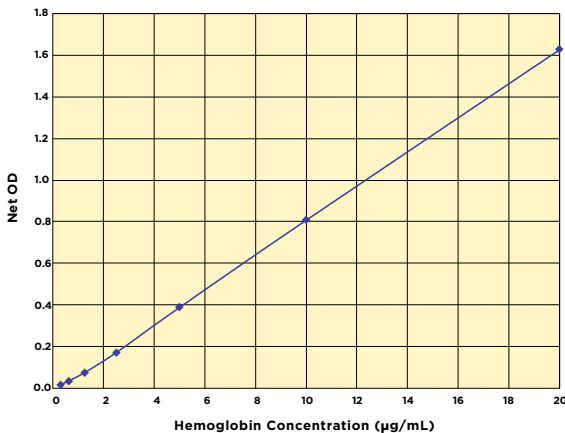
- ▶ Sample Type
K013-HX: Serum, Plasma
K013-H: Whole Blood, RBCs
- ▶ Time to Answer
30 Minutes
- ▶ Range
K013-HX: 20-0.313 $\mu\text{g/mL}$
K013-H: 16-0.25 g/dL
- ▶ Sensitivity
K013-H: 0.021 g/dL, 0.21 mg/mL
K013-HX1: 0.053 $\mu\text{g/mL}$
- ▶ Samples/Kit
88 in Duplicate
- ▶ Stable
Liquid 4°C Stable Reagents
- ▶ Readout
K013-HX: 450 nm
K013-H: 560-580 nm



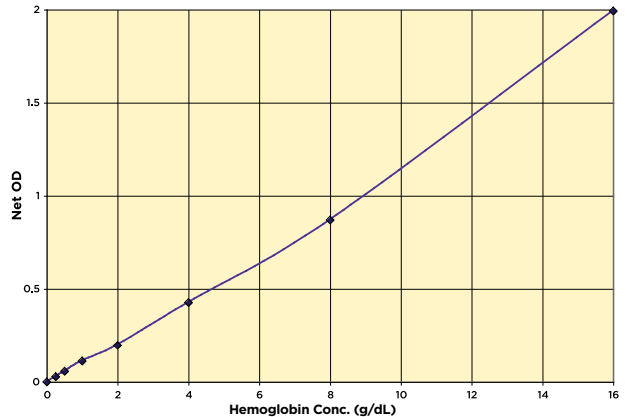
SCIENTIFIC RELEVANCE

Hemoglobin (Hgb) is an erythrocyte protein complex comprised of two sets of identical pairs of subunits, each of which bind an iron-porphyrin group commonly called heme. Heme binds and releases oxygen or carbon dioxide in response to slight changes in local gas tension. Hemoglobin values are associated with a variety of conditions ranging from anemias (low Hgb), erythrocytosis (high Hgb), thalassemias (aberrant chain synthesis), and sickling disorders (abnormal complex shape).

Hgb Regular



Hgb High Sensitivity



BCA Protein Dual Range Colorimetric Detection Kit

KO41-H1 (2 Plate)

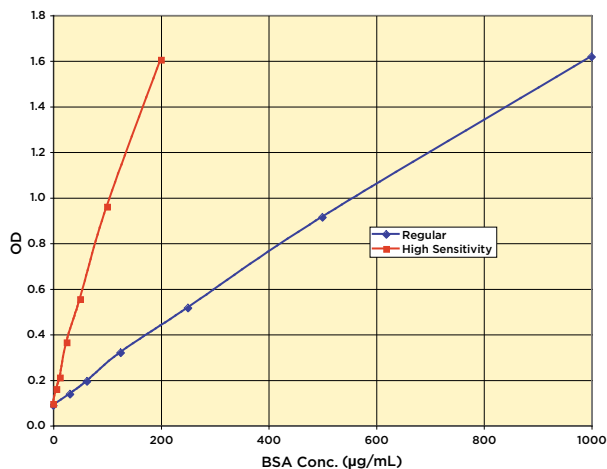
FEATURES

- ▶ Use Measure Total Protein Content
- ▶ Sample Type Cell Lysates, Urine, Serum, Plasma, Tissue Homogenates
- ▶ Samples/Kit 89 in Duplicate
- ▶ Sensitivity 1.68 µg/mL
- ▶ Stable Liquid Reagents, Stable at Room Temperature
- ▶ Readout Colorimetric, 560 nm



SCIENTIFIC RELEVANCE

Protein determination is one of the most common operations performed in biochemical research. The principle of the bicinchoninic acid (BCA) assay is similar to the Lowry assay, and relies on the formation of a Cu^{2+} -protein complex under alkaline conditions, followed by reduction of the Cu^{2+} to Cu^{1+} . The amount of reduction is proportional to protein present. It has been shown that cysteine, cystine, tryptophan, tyrosine, and peptide bonds are able to reduce Cu^{2+} to Cu^{1+} . BCA forms a purple-blue complex with Cu^{1+} in alkaline environments, thus providing a basis to monitor the reduction of alkaline Cu^{2+} by proteins.



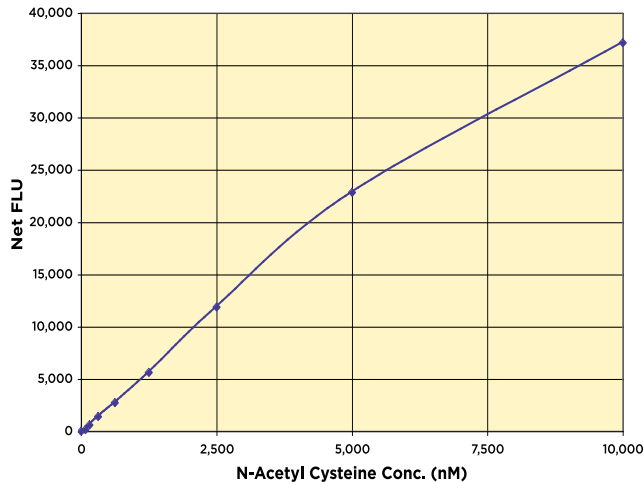
Thiol Fluorescent Detection Kit

K005-F1 (1 Plate)**FEATURES**

- ▶ Use Measure Thiol Content of Proteins and Peptides
- ▶ Adaptable Measure SH easily in 8M GuHCl Buffers
- ▶ Sensitivity 4.62 nM
- ▶ Time to Answer 30 Minutes
- ▶ Species Species Independent
- ▶ Samples/Kit 39 in Duplicate
- ▶ Stability Liquid 4°C Stable Reagents
- ▶ Readout Fluorescent, 510 nm em/370-410 nm em

**SCIENTIFIC RELEVANCE**

Free thiols in biological systems have important roles. Oxidatively-modified thiol groups of cysteine residues are known to modulate the activity of a growing number of proteins. As such, it is important to be able to accurately determine the extent of modification of specific amino acids, such as cysteine residues. This is especially difficult in a complex protein sample, especially in the presence of chaotropic agents such as guanidine hydrochloride. Typical methods using Ellman's reagent do not have sufficient sensitivity to allow economical detection of free SH groups.



Urea Nitrogen (BUN) Detection Kit

K024-H1 (2 Plate) | K024-H5 (10 Plate)

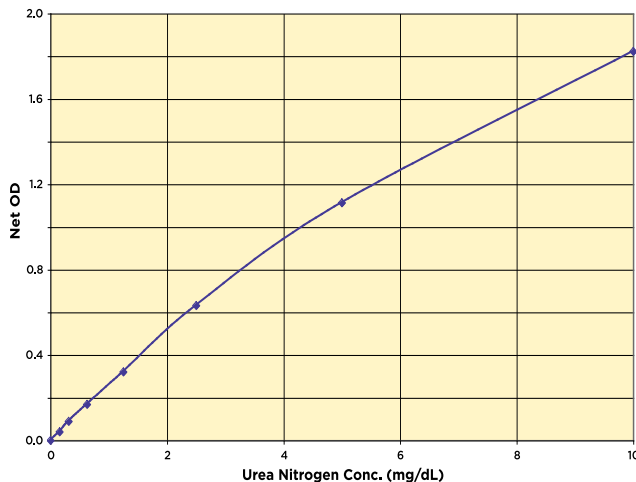
FEATURES

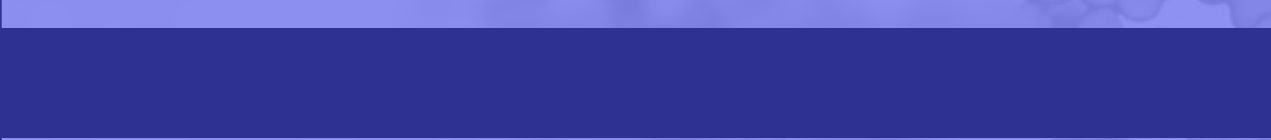
- ▶ Use Measure Urea Nitrogen
- ▶ Sample Type Serum, Plasma, Urine, Saliva
- ▶ Time to Answer 30 Minutes
- ▶ Calibrated NIST Standard Reference #912b
- ▶ Sensitivity 30 µg/dL
- ▶ Sample/Kit 88 or 472 in Duplicate
- ▶ Readout Colorimetric, 450 nm



SCIENTIFIC RELEVANCE

Urea is a by-product of protein metabolism by the liver, and is removed from the blood by the kidneys. Urea freely filters through the glomerulus, but is reabsorbed by the renal tubules in a flow-dependent fashion. The higher the flow rate, the greater amount of urea nitrogen is cleared from circulation and eliminated through the kidneys. As a result, the level of circulating urea nitrogen, along with serum creatinine, serves as a primary measure of kidney function. Normal adult blood urea nitrogen (BUN) levels should be between 7 and 21 mg urea nitrogen per 100 mL blood (mg/dL). Azotemia, poor kidney function, will cause elevated BUN levels (≥ 50 mg/dL) and is associated with acute kidney failure or injury, severe acute pancreatitis, congestive heart failure, or gastrointestinal bleeding. Azotemia also can occur with dehydration, as a result of alcohol abuse, or with high protein diets. Lower than expected BUN levels are usually not clinically predictive, but are primarily associated with liver disease or malnutrition, including malabsorption and low protein diets. Urine and saliva are considered to be acceptable non-invasive samples for measurement of urea nitrogen.





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