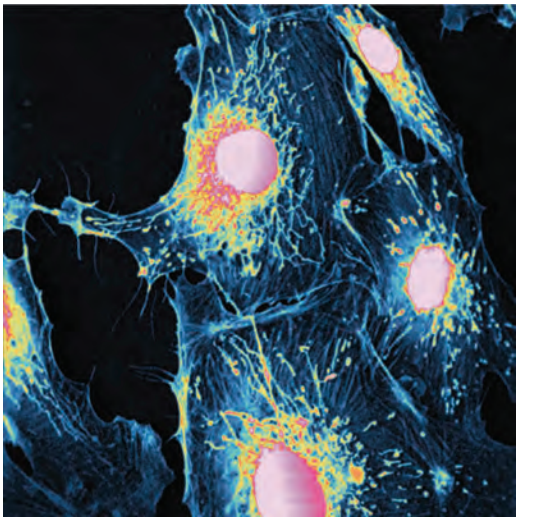
KIDNEY INJURY
ASSAY KITS



ARBOR ASSAYS™

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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. See our E-Mail Order Form at: www.arborassays.com/ordering

Distributors: Check our website at www.arborassays.com/distributors for a list of distributors.

Mail: Arbor Assays LLC, Sales Order Entry
1514 Eisenhower Place, Ann Arbor, MI 48108-3284, USA

Creatinine Serum Detection Kits

Catalog No: KB02-H1 (2 Plate) KB02-H1 (4 Plate)

FEATURES

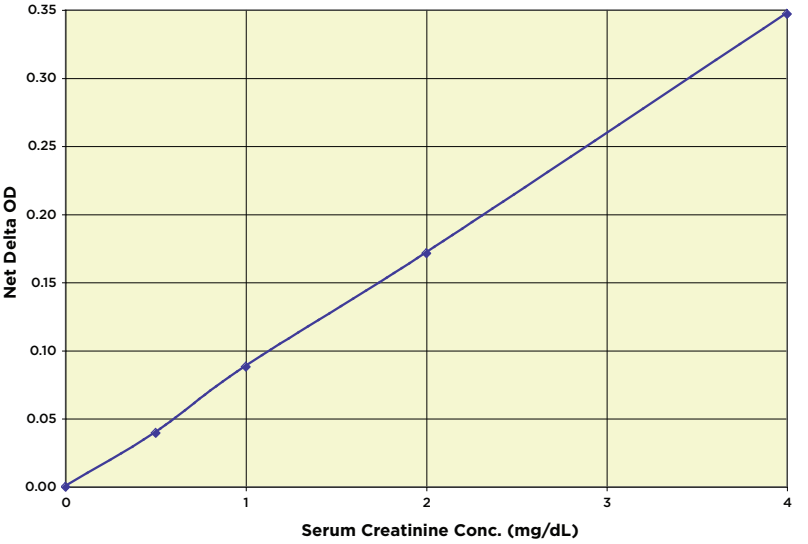
- Use — Kidney Damage Assessment
- Species — Most species
- Calibrated — NIST Standard Reference #914a
- Samples/Kit — 91 or 187 in Duplicate
- Stability — All Liquid Reagents Stable at 4°C
- Readout — Colorimetric, 490 nm

MULTI SPECIES

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 and p-creatine are converted non-enzymatically to the metabolite creatinine, which diffuses into the blood and is excreted by the kidneys. Its formation occurs at a rate that is relatively constant, and, intra-individual variation is <15% from day to day. Under normal conditions creatinine is a useful tool for normalizing the levels of other molecules found in urine. Increased levels of creatinine in the serum are useful in diagnosis of kidney disease.

TYPICAL DATA



DetectX®

Serum Creatinine Low Volume Detection Kit

Catalog No: KB02-H1D (384 well)

FEATURES

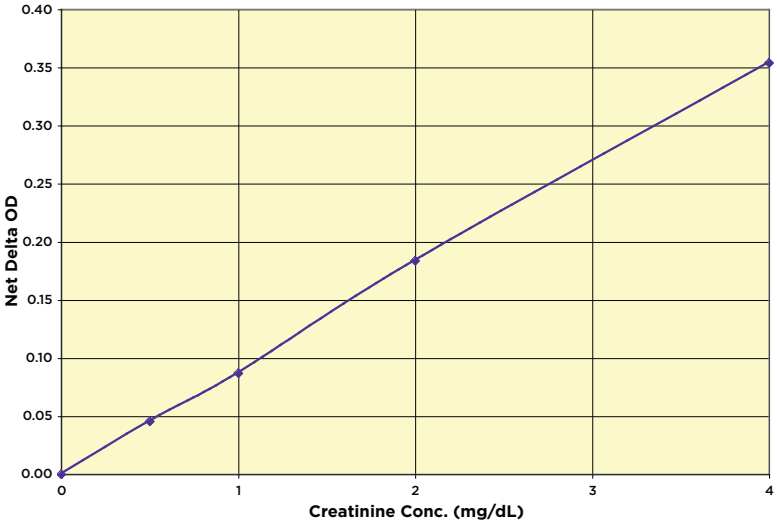
▶ Use	Kidney Damage Assessment
▶ Species	Most species
▶ Low Volume	15 µL Sample
▶ Calibrated	NIST Standard Reference #914a
▶ Samples/Kit	187 in Duplicate
▶ Stability	All Liquid Reagents Stable at 4°C
▶ Readout	Colorimetric, 490 nm

MULTI SPECIES

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 and p-creatine are converted non-enzymatically to the metabolite creatinine, which diffuses into the blood and is excreted by the kidneys. Its formation occurs at a rate that is relatively constant, and intra-individual variation is <15% from day to day. Under normal conditions creatinine is a useful tool for normalizing the levels of other molecules found in urine. Increased levels of creatinine in the serum are useful in diagnosis of kidney disease.

TYPICAL DATA



Urinary Creatinine Detection Kits

Catalog No: K002-H1 (2 Plate) K002-H5 (10 Plate)

FEATURES

- Use — Normalization of Urine Volume
- Species — Species Independent
- Calibrated — NIST Standard Reference #914a
- Samples/Kit — 88 or 472 in Duplicate
- Stability — All Liquid Reagents Stable at 4°C
- Readout — Colorimetric, 490 nm

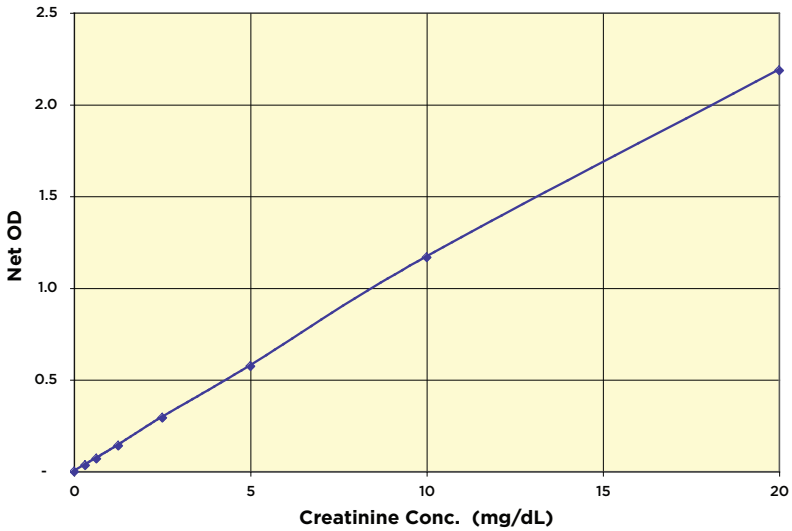
MULTI SPECIES

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 and p-creatine are converted non-enzymatically to the metabolite creatinine, which diffuses into the blood and is excreted by the kidneys. Its formation occurs at a rate that is relatively constant, and, intra-individual variation is <15% from day to day. Under normal conditions creatinine is a useful tool for normalizing the levels of other molecules found in urine.

TYPICAL DATA

MOST SENSITIVE



DetectX®

Human Cystatin C Enzyme Immunoassay (EIA) Kit

Catalog No: K012-H1 (1 Plate)

FEATURES

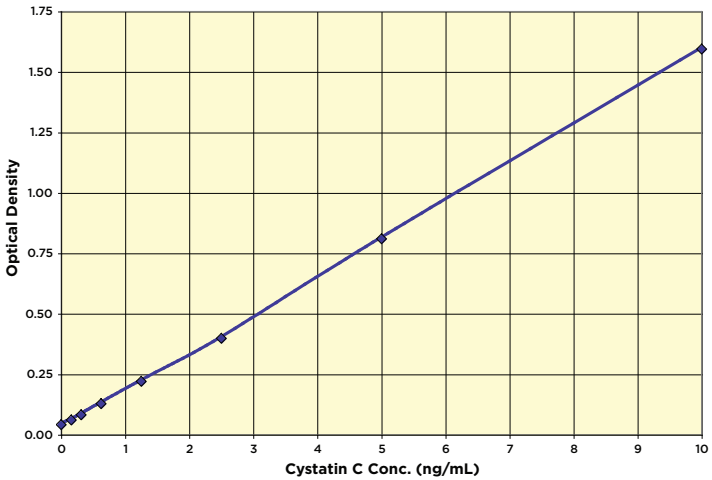
▶ Use	Kidney Injury Marker
▶ Sample Type	Serum, Plasma, Urine or TCM
▶ Samples/Kit	40 in Duplicate
▶ Stability	All Liquid Reagents Stable at 4°C
▶ Performance	0.156-10 ng/mL in 2 Hours
▶ Readout	Colorimetric, 450 nm

SCIENTIFIC RELEVANCE

Cystatin C is a non-glycosylated protein of low molecular weight (13kDa) in the cystatin superfamily. It is produced at a constant rate in all nucleated cells and then secreted, and thus is found in most body fluids. Cystatin C belongs to the cysteine proteinase inhibitor group and is associated with several pathological conditions. Imbalance between Cystatin C and cysteine proteinases is associated with diseases such as inflammation, renal failure, cancer, Alzheimer's, multiple sclerosis, and hereditary Cystatin C amyloid angiopathy. Cystatin C is removed from blood plasma by glomerular filtration in the kidneys. It is reabsorbed by the proximal tubular cells and degraded. There is a linear relationship between the reciprocal Cystatin C concentration in plasma and the glomerular filtration rate (GFR). Cystatin C is suggested to be a better marker for GFR than serum creatinine as its serum concentration is not affected by factors such as age, gender and body mass. There is association of Cystatin C levels with the incidence of myocardial infarction, coronary death and angina pectoris, presenting a risk factor for secondary cardiovascular events.

TYPICAL DATA

MOST SENSITIVE



Hemoglobin Colorimetric Detection Kit

Catalog No: K013-H1 (2 Plate)

FEATURES

▶ Sample Type	Blood, RBCs, Serum, Plasma
▶ Rapid	30 Minutes
▶ Sensitive	20 µg/mL
▶ Samples/Kit	88 in Duplicate
▶ Stable	All Liquid, Stable at 4°C
▶ Readout	Colorimetric, 560-580 nm

MULTI SPECIES

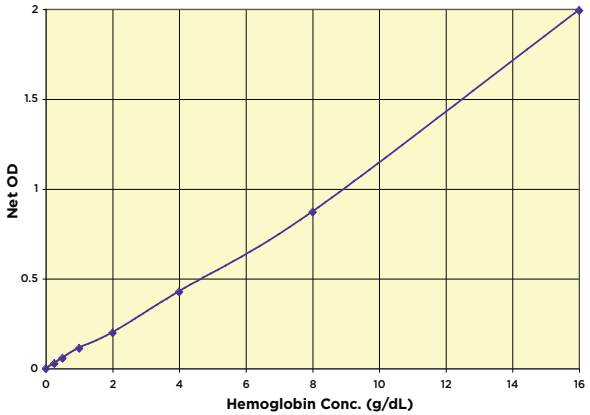
SCIENTIFIC RELEVANCE

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).

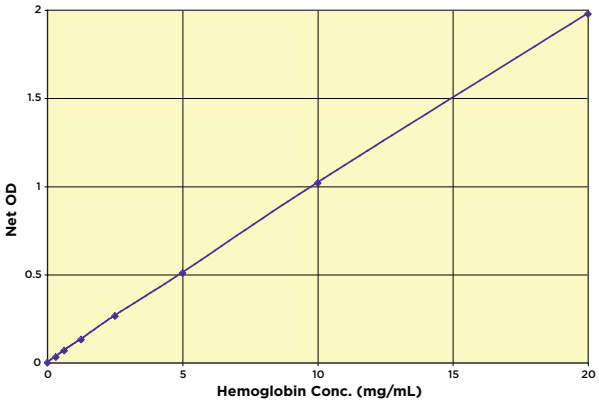
MOST SENSITIVE

TYPICAL DATA

Hgb Regular Range



Hgb High Sensitivity



DetectX®

BCA Dual Range Protein Colorimetric Detection Kit

Catalog No: K041-H1 (2 Plate)

FEATURES

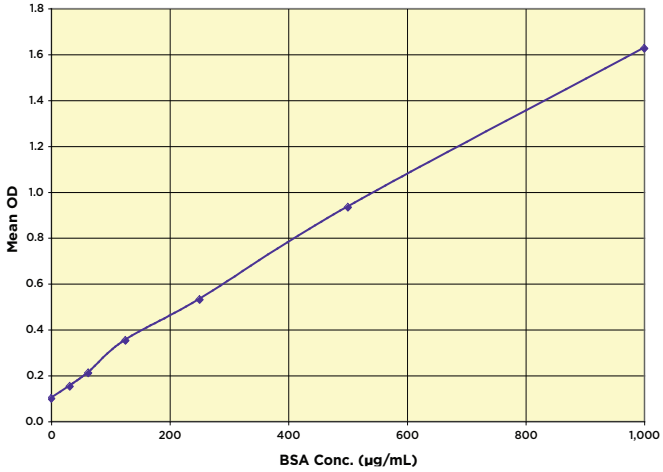
▶ Use	Measure Total Protein Content in Samples
▶ Sample Type	Lysates, Urine, Serum, Plasma, and Tissue
▶ Samples/Kit	89 in Duplicate
▶ Sensitive	Measure as little as 1.7 ug/mL
▶ Stable	All liquid reagents, stable at room temperature
▶ Readout	Colorimetric, 560 nm

MULTI SPECIES

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.

TYPICAL DATA



Retinol Binding Protein Immunoassay Kit

Catalog No: KU04-H1 (1 Plate)

FEATURES

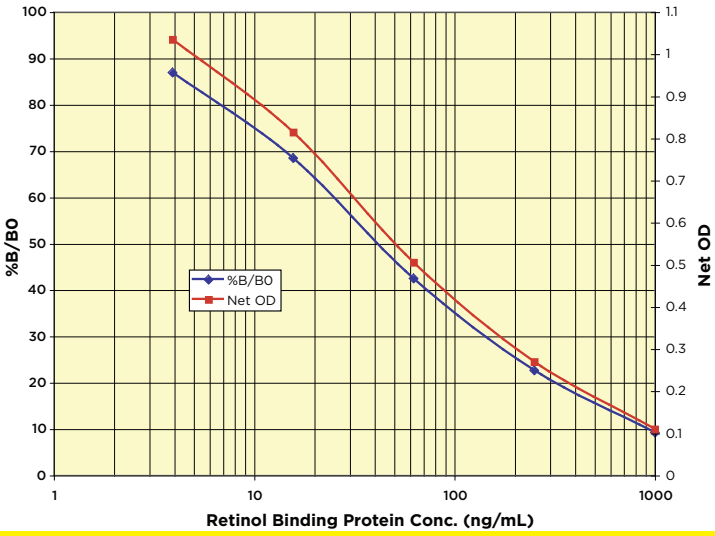
Use	Kidney Function Assessment
Range (ng/mL)	3.9-1,000
Sample Type	Urine
Samples/Kit	41 in Duplicate
Species	Human, Rat, Dog, Monkey
Time to Answer	90 Minutes
Readout	Colorimetric, 450 nm

MULTI SPECIES

SCIENTIFIC RELEVANCE

Retinol binding protein (RBP) is from a family of structurally related proteins that bind small hydrophobic molecules such as bile pigments, steroids, odorants, etc. RBP is a 21 kDa highly conserved, single-chain glycoprotein, consisting of 182 amino acids with 3 disulfide bonds, that has a hydrophobic pocket which binds retinol (vitamin A). RBP is totally filtered by the glomeruli and reabsorbed by proximal tubules. Urinary RBP is used to study renal function in heart or kidney transplant recipients, type 1 and 2 diabetics, and in people exposed to uranium from mining operations.

TYPICAL DATA



MOST SENSITIVE

DetectX®

Thiol Fluorescent Detection Kit

Catalog No: K005-F1 (1 Plate)

FEATURES

▶ Use	Measure Thiol Content of Recombinant Proteins
▶ Adaptable	Measure Protein SH in 6M GuHCl Buffers
▶ Sensitive	< 0.5 pmol Thiol/well
▶ Rapid	30 Minute Assay
▶ Samples/Kit	39 in Duplicate
▶ Stability	Non-Toxic, Reagents Stable at 4°C
▶ Readout	Fluorescent, 510 nm

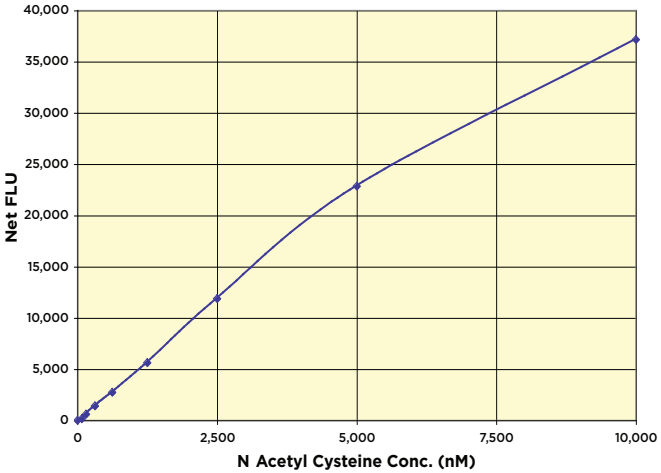
MULTI SPECIES

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. One of the most pressing problems is to accurately determining 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.

TYPICAL DATA

MOST SENSITIVE



DetectX®

Urea Nitrogen (BUN) Detection Kit

Catalog No: K024-H1 (2 Plate) K024-H5 (10 Plate)

FEATURES

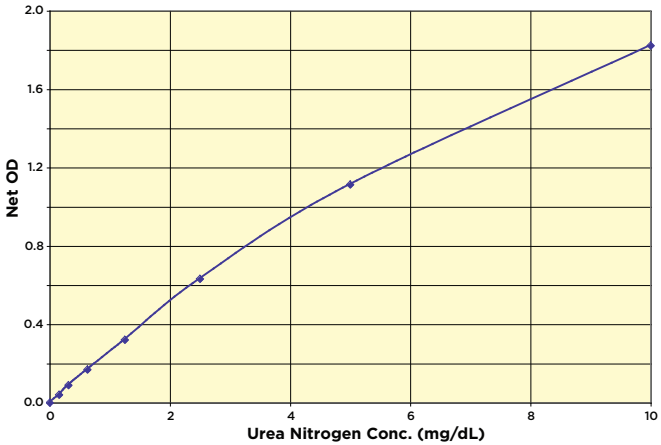
- Use — Measure Urea Nitrogen
- Sample Type — Serum, Plasma, Urine, Saliva
- Rapid — 30 Minutes
- Sensitive — 30 µg/dL
- Sample/Kit — 88 or 472 Samples in Duplicate
- Readout — Colorimetric, 450 nm

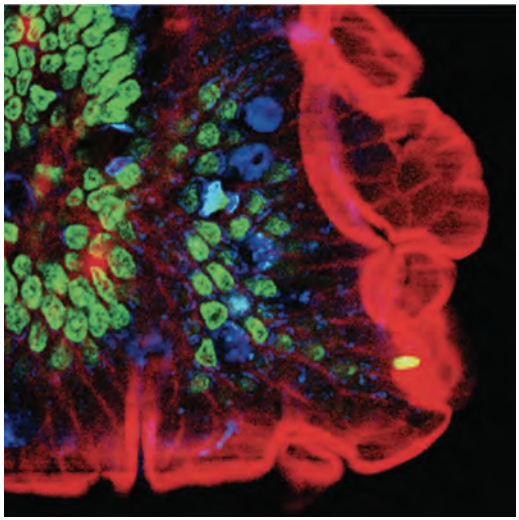
SCIENTIFIC RELEVANCE

Urea is a by-product of protein metabolism by the liver, and is therefore removed from the blood by the kidneys. Urea freely filters through the glomerulous, 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 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.

MOST SENSITIVE

TYPICAL DATA





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