BIOMEDICAL RESEARCH SERVICE CENTER
UNIVERSITY at BUFFALO, STATE UNIVERSITY of NEW YORK

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Serum Albumin Assay Kit (Cat #: A-129)

COMPONENTS:

Albumin Assay Solution:	40 ml, store at room temperature (for 200 wells)
100 mg/ml BSA:	1 ml, store at 4ºC

PRODUCT DESCRIPTION: Albumin is a major circulating protein produced by the liver, accounting for ~60% of total serum proteins and playing important roles in maintaining physiological pH and osmotic pressure. The normal range is 3.5 to 5.5 g/dL (35 to 55 mg/ml). Since serum albumin is a reliable prognostic indicator for morbidity and mortality, an albumin assay is routinely included in the panels of tests known as comprehensive metabolic panel (CMP). The Serum Albumin Assay Kit is designed to measure albumin directly without any pretreatment of samples (serum, plasma, urine, and cell culture medium). The kit may be used for cuvette or multi-well plate assays. The protocol only requires 5-minute incubation, following which the intensity of a blue color is measured at 610 nm, which is directly proportional to the albumin concentration. The assay kit is stable for at least one year under proper storage and handling conditions.

PROTOCOL

BSA Standards- First dilute the 100 mg/ml BSA standard 100 fold using dH_2O to obtain a 1 mg/ml standard, e.g. 990 µl dH_2O + 10 µl 100 mg/ml BSA. Perform serial dilutions to obtain 0.5, 0.25, 0.125, and 0.0625 mg/ml (500, 250, 125, and 62.5 µg/ml) using dH_2O. Diluted protein standards should be stored at -20ºC.

Serum/plasma/urine samples- Serum/plasma samples typically need to be diluted 100 fold with dH_2O prior to assay. Urine samples are also diluted prior to assay.

Albumin Assay:

1. Pipet 20 µl dH_2O (as blank), diluted BSA standards, and properly diluted samples to each well of a 96-well plate.
2. Add 0.2 ml Albumin Assay Solution to each well (avoid air bubbles). Agitate plate gently for 10 sec, and incubate at room temperature for 5 min.
3. Read absorbance at 610 nm using a plate reader. Subtract the blank well reading from all standard and sample well readings. Use the subtracted readings to generate the standard plot and calculate sample albumin concentration (see below).
4. Sample albumin concentration is derived from the trend line equation of the BSA standard plot established at the same time (see graph below; x= albumin concentration, y= $O.D._{610\ nm}$). The standard plot must be established for each assay.

   Note: Sample dilution with dH_2O prior to assay may be necessary to obtain accurate measurement. Multiply the result by the applicable dilution factor where applicable.

NOTE:

- The assay format can be proportionately scaled up for cuvette measurement.
- The Albumin Assay Solution contains diluted acetic acid. Handle with caution and avoid skin contact. Please visit the product webpage or contact us for MSDS information on acetic acid, sodium acetate, and Bromophenol Blue.