

Total Sialic Acid Assay Kit

Total Sialic Acid Assay Kit (Fluorometric)

CATALOG #
AAA44693

PRODUCT SYNONYMS

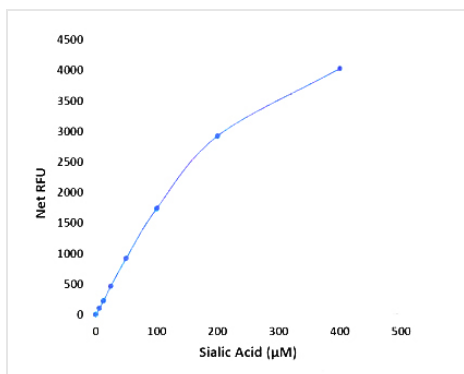
Total Sialic Acid; Total Sialic Acid Assay Kit (Fluorometric); Total Sialic Acid assay kit

PRODUCT SPECIFICATIONS

Detection Method

Colorimetric

IMAGES



Standard Curve (Sample)

ADDITIONAL INFORMATION

Related Product Information for Total Sialic Acid assay kit	Background: The term "Sialic Acid" is used to describe a family of derivatives of nine-carbon monosaccharides. There are at least 43 derivatives containing either N- or O- substitutions: the most common derivative is N-acetylneuraminic Acid (NANA or Neu5Ac). While millimolar amounts of sialic acid have been detected in normal human serum, the highest intracellular amounts are found in brain gangliosides which function in neurotransmission, memory storage, as well as synapse formation. Additionally, proteins rich in sialic acid, known as sialoglycoproteins, can bind the cell adhesion molecule Selectin. A buildup of these sialoglycoproteins on surface of metastatic cancer cells causes a significant increase in cell surface negative charge, causing repulsion from other cells and facilitating cancer cell entry into the bloodstream. Severe autosomal recessive neurodegenerative disorders known as sialic acid storage diseases (SSDs) are caused by a defect in transporting sialic acid across the lysosomal membrane, leading to accumulation of sialic acid in tissues, fibroblasts, and urine. This lack of transport can be detected by quantification of free sialic acid in urine. Furthermore, certain viruses and bacteria use sialic acid for host binding and recognition. For example, all strains of influenza A virus need sialic acid to connect with cells. When influenza A virus binds a sialic acid receptor on the cell surface, the cell internalizes the virus leading to cell infection. The Total Sialic Acid Assay Kit is a simple fluorometric assay that measures the amount of total sialic acid present in biological samples in a 96-well microtiter plate format. Each kit provides sufficient reagents to perform up to 100 assays*, including blanks, sialic acid standards, and unknown samples. Sample sialic concentrations are determined by comparison with a known sialic acid standard. The kit has a detection sensitivity limit of 6.25 uM sialic acid. Principle of the Assay: The Total Sialic Acid Assay Kit measures total Sialic Acid within biological samples. Sialic acid attached to proteins and other molecules is first converted to a free form by treatment with neuraminidase. Then sialic acid is converted to pyruvate in the presence of sialic acid aldolase. Finally, pyruvate is oxidized by pyruvate oxidase in the presence of phosphate and oxygen into acetyl phosphate, carbon dioxide, and hydrogen peroxide. The resulting hydrogen peroxide is then detected with a highly specific fluorometric probe. Horseradish peroxidase catalyzes the reaction between the probe and hydrogen peroxide, which bind in a 1:1 ratio. Samples are compared to a known concentration of sialic acid standard within the 96-well microtiter plate format. Samples and standards are incubated for 30 minutes and then read with a standard 96-well fluorometric plate reader (Figure 1).
Product Categories/Family for Total Sialic Acid assay kit	Metabolism Research; Carbohydrate Metabolism; Total Sialic Acid Assay Kit (Fluorometric)

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.