

Sphingomyelin Assay Kit

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CATALOG #
AAA11423

PRODUCT SYNONYMS

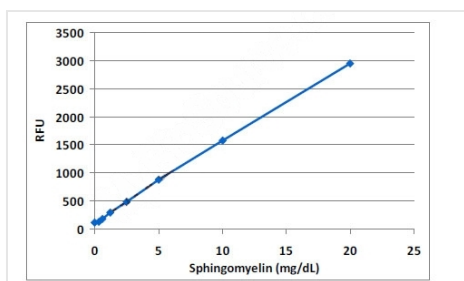
Sphingomyelin; Sphingomyelin Assay Kit; Sphingomyelin assay kit

PRODUCT SPECIFICATIONS

Preparation and Storage

Upon receipt, store the Sphingomyelin Standard, Fluorescence Probe, HRP, Alkaline Phosphatase and Choline Oxidase at -20 degree C. The Fluorescence Probe is light sensitive and must be stored accordingly. Avoid multiple freeze/thaw cycles. Store the remaining kit components at 4 degree C.

IMAGES



Standard Curve (Sample)

ADDITIONAL INFORMATION

Related Product Information for Sphingomyelin assay kit	Principle of the Assay: Sphingomyelin Assay Kit measures the sphingomyelin present within serum, plasma, or tissue samples. The assay is based on the enzyme driven reaction that will detect sphingomyelin via the enzymatic activity of sphingomyelinase, alkaline phosphatase, and choline oxidase. First, sphingomyelinase hydrolyzes sphingomyelin into phosphorylcholine and the lipid ceramide. Alkaline phosphatase breaks down phosphorylcholine into choline, which is then oxidized by choline oxidase to produce hydrogen peroxide. The hydrogen peroxide is then detected with a highly specific fluorescence 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 sphingomyelin standard within the 96-well microtiter plate format. Samples and standards are incubated for 60 minutes and then read with a standard 96-well fluorometric plate reader (Figure 1). Background/Introduction: Phospholipids are important structural lipids that are the major component of cell membranes and lipid bilayers. Phospholipids contain a hydrophilic head and a hydrophobic tail which give the molecules their unique characteristics. Most phospholipids contain one diglyceride, a phosphate group, and one choline group. Sphingomyelin (ceramide phosphorylcholine) is a sphingolipid found in eukaryotic cell membranes and lipoproteins. Sphingomyelin usually consists of a ceramide and phosphorylcholine molecule where the ceramide core comprises of a fatty acid bonded via an amide bond to a sphingosine molecule. There is a polar head group which is either phosphoethanolamine or phosphocholine. Sphingomyelin represents about 85% of all sphingolipids and makes up about 10-20% of lipids within the plasma membrane. Sphingomyelin is involved in signal transduction and is highly concentrated in the myelin sheath around many nerve cell axons. The plasma membranes of many cells are rich with sphingomyelin. Sphingolipids are synthesized in a pathway that originates in the ER and is completed in the Golgi apparatus. Many of their functions are done in the plasma membranes and endosomes. Sphingomyelin is converted to ceramide via sphingomyelinases. Ceramides have been implicated in signaling pathways that lead to apoptosis, differentiation and proliferation. Sphingomyelins have been implicated in the pathogenesis of atherosclerosis, inflammation, necrosis, autophagy, senescence, stress response as well as other signaling disease states. Niemann-Pick disease is an inherited disease where deficiency of sphingomyelinase activity results in sphingomyelin accumulating in cells, tissues, and fluids. Other sphingolipid diseases are Fabry disease, Gaucher disease, Tay-Sachs disease, Krabbe disease and Metachromatic leukodystrophy. Sphingomyelin Assay Kit is a simple fluorometric assay that measures the amount of sphingomyelin present in plasma or serum, tissue homogenates, or cell suspensions in a 96-well microtiter plate format. Each kit provides sufficient reagents to perform up to 96 assays, including blanks, sphingomyelin standards and unknown samples. Sample sphingomyelin concentrations are determined by comparison with a known sphingomyelin standard.
Product Categories/Family for Sphingomyelin assay kit	Metabolism Research ; Lipoprotein Metabolism ; Phospholipid Assays
References	1. Hojjati, M.R., et al. (2006) J. Lipid Res. 47(3): 673-676. 2. Jiang, X.-C., et al. (2000) Arterioscler. Thromb. Vasc. Biol. 20(12): 2614-2618. 3. Riboni, L., et al. (1997) Prog. Lipid Res. 36: 153-195. 4. Testi, R. (1996) Trends Biochem. Sci. 21: 468-471. Winkler, E.A. et al. (2014). Blood-spinal cord barrier disruption contributes to early motor-neuron degeneration in ALS-model mice. PNAS 111:E1035-E1042.

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.

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 Online datasheet: <https://www.aaabiotech.com/assay-kits/sphingomyelin/11423>