CREATIVE BIOMART®
Assay Kit

Homocysteine Assay Kit (Fluorometric)

Product Information

Cat

Kit-1021

Common Name

Homocysteine

Cat.No. Kit-1021

Description

Homocysteine is a non-proteogenic amino acid synthesized intracellularly by removal of the N-methyl group from the essential amino acid methionine. Homocysteine is exported from cells into the blood, where it exists mainly as an oxidized disulfide species, either as a dimer or bound to cysteine residues of serum proteins. The reduced form of homocysteine ('free' homocysteine) can be metabolized into cysteine via the transsulfuration pathway; however, it can also undergo intramolecular cyclization, forming the highly reactive pro-oxidant homocysteine thiolactone. Subsequent N-homocysteinylation of protein lysine residues by the reactive thiolactone disrupts protein conformation, leading to formation of cytotoxic protein aggregates. Homocysteinylated proteins may also act as autoantigens, triggering arterial inflammation and atherosclerosis. Elevated plasma homocysteine concentration is a clinical biomarker for increased risk of cardiovascular disease, ischemic stroke and myocardial infarction. Severely elevated homocysteine levels (hyperhomocysteinemia) are correlated with a 4-fold increase in mortality due to heart attack and a 16-fold increase in the likelihood of recurrent stroke. Homocysteine Assay Kit allows for quantification of total homocysteine in biological fluids such as plasma and serum. The assay is based on the reduction of homocysteine disulfides to free homocysteine, which is cleaved by a homocysteine-selective enzyme, generating an intermediate product. The intermediate reacts with a probe solution to form a stable fluorophore that emits in the far-red spectrum (Ex/Em = 658/708 nm). The assay is not affected by physiological concentrations of other biological thiols (such as cysteine, methionine and glutathione), is high-throughput adaptable and can detect as low as 5 μM homocysteine.

Applications

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CREATIVE BIOMART®
Assay Kit

Homocysteine Assay Kit (Fluorometric)

Estimation of Homocysteine in various biological samples

Storage

-20°C

Shipping

Gel Pack

Size

100 assays

Kit Components

Homocysteine Assay Buffer; Disulfide Reducing Agent (DTT); Homocysteine Enzyme Mix; Fluorogenic Probe Solution; Develop Solution; Homocysteine Disulfide Standard

Target Species

Mammalian

Detection method Fluorescence (Ex/Em = 658/708 nm)

Features & Benefits

Simple, sensitive and HTP adaptable Protocol;
Specific for Homocysteine without interference from other thiol based amino acids;
This kit can detect as little as 5 μM of Homocysteine in a variety of biological samples

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