

ELISA kit for the detection of Homocysteine in the research laboratory

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55R-IB46101

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ELISA kit for the detection of Homocysteine in the research laboratory

More information

Name:	ELISA kit for the detection of Homocysteine in the research laboratory
Product group:	Kits
Product Number:	ABCA0131492
Price	Please Enquire
Quantity:	185 Test(s)
Type of Kit:	ELISA
Availablitiy:	THIS PRODUCT IS DISCONTINUED.
Non Confirming product:	replace the product at no cost.



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Description:

Homocysteine (Hcy) is a thiolcontaining amino acid produced by the intracellular demethylation of methionine. Total homocysteine (tHcy) represents the sum of all forms of Hcy including forms of oxidized, protein bound and free. Elevated level of tHcy have emerged as an important risk factor in the assessment of cardiovascular disease. Excess Hcy in the bloodstream may cause injuries to arterial vessels due to its irritant nature, and result in inflammation and plaque formation, which may eventually cause blockage of blood flow to the heart. Elevated tHcy levels are caused by four major factors, including: a) genetic deficiencies in enzymes involved in Hcy metabolisms such as cystathionine beta-synthase (CBS), methionine synthase (MS), and methylenetetrahydrofolate reductase (MTHFR); b) nutritional deficiency in B vitamins such as B6, B12 and folate; c) renal failure for effective amino acid clearance, and d) drug interactions such as nitric oxide, methotrexate and phenytoin that interfere with Hcy metabolisms.

Elevated levels of tHcy are also linked with Alzheimer's disease and osteoporosis. Guidelines for tHcy determination in clinical laboratories have recently been established.

Application	
Applications:	ELISA
Application notes:	Optimal conditions to be determined by end user
Research area:	Metabolism Nutrition

Components				
Component	Concentration	Description	Volume	Cap Color
Notes		<p>The IBLAmerica Homocysteine 3 Reagent Enzymatic Assay is based on a novel assay principle that assesses the cosubstrate conversion product (a molecule that is not a substrate of the Hcy conversion enzyme, and does not contain any element from sample Hcy) instead of assessing cosubstrate or Hcy conversion products of Hcy as described in the literature. In this assay, oxidized Hcy is first reduced to free Hcy which then reacts with a cosubstrate, Sadenosylmethionine (SAM) catalyzed by a Hcy Smethyltransferase to form methionine (the Hcy conversion product of Hcy) and Sadenosylhomocysteine (SAH, the cosubstrate conversion product). SAH is assessed by coupled enzyme reactions including SAH hydrolase, adenosine (Ado) deaminase and glutamate dehydrogenase, wherein SAH is hydrolyzed into adenosine (Ado) and Hcy by SAH hydrolase. The formed Hcy that is originated from the cosubstrate SAM is cycled into the Hcy conversion reaction by Hcy Smethyltransferase. This forms a cosubstrate conversion product based enzyme cycling reaction system with significant amplification of detection signals. The formed Ado is immediately hydrolyzed into inosine and ammonia which reacts with glutamate dehydrogenase with concomitant conversions of NADH to NAD⁺. The concentration of Hcy in the sample is indirectly proportional to the amount of NADH converted to NAD⁺ (DA340nm).</p>		

Product Information	
Storage:	Store at 2-8 deg C

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