Delta-Aminolevulinic Acid Dehydratase (ALAD) ELISA Kit for Human

PRODUCT OVERVIEW

Product Name	Delta-aminolevulinic acid dehydratase (ALAD), ELISA Kit
Full Product Name	Human Delta-aminolevulinic acid dehydratase (ALAD) ELISA Kit
Product Gene Name	ALAD elisa kit
Product Synonym Names	RP11-10I9.1; ALADH; MGC5057; PBGS; aminolevulinate dehydratase|delta-aminolevulinic acid dehydratase|porphobilinogen synthase
Species Reactivity	Human
Assay Type	Sandwich
Samples	Serum, Plasma, Other biological fluids
Specificity	This assay has high sensitivity and excellent specificity for detection of Human ALAD. No significant cross-reactivity or interference between Human ALAD and analogues was observed.
Preparation and Storage	Store at 2-8 degree C.
Molecular Weight	39,034 Da
OMIM	M13928 mRNA
3D Structure	ModBase 3D Structure for P13716
Sample Volume	1-200 uL
Precision	Intra-assay Precision (Precision within an assay) Three samples of known concentration were tested twenty times on one plate to assess intra-assay precision. Inter-assay Precision (Precision between assays) Three samples of known concentration were tested in forty separate assays to assess inter-assay precision. CV (%) = SD/meanX100 Intra-Assay: CV Inter-Assay: CV
Detection Wavelength	450 nm
ISO Certification	Manufactured in an ISO 9001:2015 Certified Laboratory.
Related Product Information for ALAD elisa kit	Principle of the Assay: This assay employs a two-site sandwich ELISA to quantitate ALAD in samples. An antibody specific for ALAD has been pre-coated onto a microplate. Standards and samples are pipetted into the wells and anyALAD present is bound by the immobilized antibody. After removing any unbound substances, a biotin-conjugated antibody specific for ALAD is added to the wells. After washing, Streptavidin conjugated Horseradish Peroxidase (HRP) is added to the wells. Following a wash to remove any unbound avidin-enzyme reagent, a substrate solution is added to the wells and color develops in proportion to the amount of ALAD bound in the initial step. The color development is stopped and the intensity of the color is measured.
Other Notes	Small volumes of ALAD elisa kit vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.

Searchable Terms for ALAD purchase	MBS285008 is a ready-to-use microwell, strip-or-full plate ELISA (enzyme-linked immunosorbent assay) Kit for analyzing the presence of the Delta-aminolevulinic acid dehydratase (ALAD) ELISA Kit target analytes in biological samples. The concentration gradients of the kit standards or positive controls render a theoretical kit detection range in biological research samples containing ALAD. The ELISA analytical biochemical technique of the MBS285008 kit is based on ALAD antibody-ALAD antigen interactions (immunosorbency) and an HRP colorimetric detection system to detect ALAD antigen targets in samples. The ELISA Kit is designed to detect native, not recombinant, ALAD. Appropriate sample types may include undiluted body fluids and/or tissue homogenates, secretions. Quality control assays assessing reproducibility identified the intra-assay CV (%) and inter-assay CV(%).

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for ALAD. It may not necessarily be applicable to this product.

NCBI GI #	189083849
NCBI GeneID	210
NCBI Accession #	NP_000022.3
UniProt Primary Accession #	P13716
UniProt Secondary Accession #	Q16870; Q16871; Q9BVQ9; A8K375; B2R6F2
UniProt Related Accession #	P13716
GenBank Nucleotide #	NM_000031.5
NCBI Official Full Name	delta-aminolevulinic acid dehydratase isoform b
NCBI Official Synonym Full Names	aminolevulinate dehydratase
NCBI Official Symbol	ALAD
NCBI Official Synonym Symbols	PBGS; ALADH
UniProt Protein Name	Delta-aminolevulinic acid dehydratase
UniProt Synonym Protein Names	Porphobilinogen synthase
Protein Family	Delta-aminolevulinic acid dehydratase
UniProt Gene Name	ALAD
UniProt Synonym Gene Names	ALADH
NCBI Protein Information	delta-aminolevulinic acid dehydratase
NCBI Summary for ALAD	The ALAD enzyme is composed of 8 identical subunits and catalyzes the condensation of 2 molecules of delta-aminolevulinate to form porphobilinogen (a precursor of heme, cytochromes and other hemoproteins). ALAD catalyzes the second step in the porphyrin and heme biosynthetic pathway; zinc is essential for enzymatic activity. ALAD enzymatic activity is inhibited by lead and a defect in the ALAD structural gene can cause increased sensitivity to lead poisoning and acute hepatic porphyria. Alternative splicing of this gene results in multiple transcript variants encoding different isoforms. [provided by RefSeq, Dec 2015]

UniProt Comments for ALAD	ALAD: Catalyzes an early step in the biosynthesis of tetrapyrroles. Binds two molecules of 5-aminolevulinate per subunit, each at a distinct site, and catalyzes their condensation to form porphobilinogen. Defects in ALAD are the cause of acute hepatic porphyria (AHEPP). A form of porphyria. Porphyrias are inherited defects in the biosynthesis of heme, resulting in the accumulation and increased excretion of porphyrins or porphyrin precursors. They are classified as erythropoietic or hepatic, depending on whether the enzyme deficiency occurs in red blood cells or in the liver. AHP is characterized by attacks of gastrointestinal disturbances, abdominal colic, paralysis, and peripheral neuropathy. Most attacks are precipitated by drugs, alcohol, caloric deprivation, infections, or endocrine factors. Belongs to the ALADH family. 2 isoforms of the human protein are produced by alternative splicing. Protein type: Cofactor and Vitamin Metabolism - porphyrin and chlorophyll; EC 4.2.1.24; Lyase Chromosomal Location of Human Ortholog: 9q32 Cellular Component: cytosol; extracellular region; nucleus; proteasome core complex Molecular Function: catalytic activity; identical protein binding; porphobilinogen synthase activity; zinc ion binding Biological Process: heme biosynthetic process; neutrophil degranulation; protein homooligomerization; protoporphyrinogen IX biosynthetic process; response to activity; response to aluminum ion; response to amino acid; response to arsenic; response to cadmium ion; response to cobalt ion; response to drug; response to ethanol; response to glucocorticoid stimulus; response to herbicide; response to hypoxia; response to ionizing radiation; response to iron ion; response to lipopolysaccharide; response to mercury ion; response to methylmercury; response to oxidative stress; response to selenium ion; response to vitamin B1; response to vitamin E; response to zinc ion Disease: Porphyria, Acute Hepatic
Research Articles on ALAD	**1.** Overexpression of delta-aminolevulinate dehydratase (ALAD)suppresses breast cancer cell proliferation and invasion and inhibits the epithelial-mesenchymal transition phenotype.
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