IDH1 Antibody (Center) Blocking Peptide

PRODUCT OVERVIEW

Product Name	IDH1, Blocking Peptide
Full Product Name	IDH1 Antibody (Center) Blocking Peptide
Product Gene Name	IDH1 blocking peptide
Product Synonym Gene Name	PICD
Product Synonym Names	Isocitrate dehydrogenase [NADP] cytoplasmic; IDH; Cytosolic NADP-isocitrate dehydrogenase; IDP; NADP(+)-specific ICDH; Oxalosuccinate decarboxylase; IDH1; PICD
Form/Format	Synthetic peptide was lyophilized with 100% acetonitrile and is supplied as a powder. Reconstitute with 0.1 ml DI water for a final concentration of 1 mg/ml.
Specificity	The synthetic peptide sequence used to generate the antibody was selected from the Center region of human IDH1. A 10 to 100 fold molar excess to antibody is recommended. Precise conditions should be optimized for a particular assay.
Preparation and Storage	Maintain refrigerated at 2-8 degree C for up to 6 months. For long term storage store at -20 degree C.
Antibody/Peptide Pairs	IDH1 peptide (MBS9226908) is used for blocking the activity of IDH1 antibody (MBS9204092)
Molecular Weight	46,659 Da
OMIM	137800
Cellular Location	Cytoplasm. Peroxisome
Related Product Information for IDH1 blocking peptide	MBS9226908 is a blocking peptide targeting IDH1. Also known as IDH1 Antibody (Center) Blocking Peptide.
Other Notes	Small volumes of IDH1 blocking peptide 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.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for IDH1. It may not necessarily be applicable to this product.

NCBI GI #	21903432
NCBI GeneID	3417
NCBI Accession #	O75874.2
UniProt Primary Accession #	O75874
UniProt Secondary Accession #	Q567U4; Q6FHQ6; Q7Z3V0; Q93090; Q9NTJ9; Q9UKW8
UniProt Related Accession #	O75874
NCBI Official Full Name	Isocitrate dehydrogenase
NCBI Official Synonym Full Names	isocitrate dehydrogenase (NADP(+)) 1, cytosolic
NCBI Official Symbol	IDH1
NCBI Official Synonym Symbols	IDH; IDP; IDCD; IDPC; PICD; HEL-216; HEL-S-26
UniProt Protein Name	Isocitrate dehydrogenase [NADP] cytoplasmic

UniProt Synonym Protein Names	Cytosolic NADP-isocitrate dehydrogenase; IDP; NADP(+)-specific ICDH; Oxalosuccinate decarboxylase
Protein Family	Isocitrate dehydrogenase
UniProt Gene Name	IDH1
UniProt Synonym Gene Names	PICD; IDH
UniProt Entry Name	IDHC_HUMAN
NCBI Protein Information	isocitrate dehydrogenase [NADP] cytoplasmic
NCBI Summary for IDH1	Isocitrate dehydrogenases catalyze the oxidative decarboxylation of isocitrate to 2-oxoglutarate. These enzymes belong to two distinct subclasses, one of which utilizes NAD(+) as the electron acceptor and the other NADP(+). Five isocitrate dehydrogenases have been reported: three NAD(+)-dependent isocitrate dehydrogenases, which localize to the mitochondrial matrix, and two NADP(+)-dependent isocitrate dehydrogenases, one of which is mitochondrial and the other predominantly cytosolic. Each NADP(+)-dependent isozyme is a homodimer. The protein encoded by this gene is the NADP(+)-dependent isocitrate dehydrogenase found in the cytoplasm and peroxisomes. It contains the PTS-1 peroxisomal targeting signal sequence. The presence of this enzyme in peroxisomes suggests roles in the regeneration of NADPH for intraperoxisomal reductions, such as the conversion of 2, 4-dienoyl-CoAs to 3-enoyl-CoAs, as well as in peroxisomal reactions that consume 2-oxoglutarate, namely the alpha-hydroxylation of phytanic acid. The cytoplasmic enzyme serves a significant role in cytoplasmic NADPH production. Alternatively spliced transcript variants encoding the same protein have been found for this gene. [provided by RefSeq, Sep 2013]
UniProt Comments for IDH1	IDH1: an oxidoreductase that catalyzes the third step of the TCA cycle: the oxidative decarboxylation of isocitrate, consuming NADP(+), and producing alpha-ketoglutarate (alpha-KG) and CO2. Alpha-KG is an activator the dioxygenases that hydroxylate the transcription factor HIF and lead to its degradation by VHL. Since HIF turns on oncogenic pathways, IDH1 has apparent tumor suppressor activity. Homo-dimerization is required for activity. Each subunit binds 1 magnesium or manganese ion. IDH1 is located in the cytosol and peroxisomes. Somatic mutations affecting arginine 132 (R132) are found in 80% of grade II?III gliomas and secondary glioblastomas in humans, and cause disease in a tissue-specific fashion. Only a single copy of the gene has been found to be mutated in tumours. Mutations of R132 to H, C, S, G, V, or L have been reported to be neomorphic, abolishing the conversion of isocitrate to alpha-KG. Instead, alpha-KG is converted to R(-)-2-hydroxyglutarate (2HG). Elevated levels of 2HG correlate with an elevated risk of malignant brain tumors. Neomorphic mutations in IDH1 and IDH2 convert alpha-KG to 2-hydroxyglutarate (2-HG) occur in a high percentage of patients with cytogenetically normal acute myeloid leukemia (AML). Protein type: EC 1.1.1.42; Oxidoreductase; Carbohydrate Metabolism - citrate (TCA) cycle; Other Amino Acids Metabolism - glutathione Chromosomal Location of Human Ortholog: 2q33.3 Cellular Component: cytoplasm; cytosol; peroxisomal matrix; peroxisome Molecular Function: (R)-2-hydroxyglutarate dehydrogenase activity; isocitrate dehydrogenase (NADP+) activity; magnesium ion binding; protein homodimerization activity; receptor binding Biological Process: 2-oxoglutarate metabolic process; isocitrate metabolic process; NADPH regeneration Disease: Glioma Susceptibility 1
Research Articles on IDH1	**1.** The IDH1 mutations are associated with improved survival in patients with Glioblastomas.
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