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IDH1 Antibody

Catalog # ASC11154

Product Information

Application	WB, E
Primary Accession	O75874
Other Accession	NP_005887, 28178825
Reactivity	Human, Mouse, Rat
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Calculated MW	46659
Concentration (mg/ml)	1 mg/mL
Conjugate	Unconjugated
Application Notes	IDH1 antibody can be used for detection of IDH1 by Western blot at 1 - 2 g/mL.

Additional Information

Gene ID	3417
Other Names	Isocitrate dehydrogenase [NADP] cytoplasmic, IDH, 1.1.1.42, Cytosolic NADP-isocitrate dehydrogenase, IDP, NADP(+)-specific ICDH, Oxalosuccinate decarboxylase, IDH1, PICD
Target/Specificity	IDH1;
Reconstitution & Storage	IDH1 antibody can be stored at 4°C for three months and -20°C, stable for up to one year. As with all antibodies care should be taken to avoid repeated freeze thaw cycles. Antibodies should not be exposed to prolonged high temperatures.
Precautions	IDH1 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	IDH1
Synonyms	PICD
Function	Catalyzes the NADP(+)-dependent oxidative decarboxylation of isocitrate (D-threo-isocitrate) to 2-ketoglutarate (2-oxoglutarate), which is required by other enzymes such as the phytanoyl-CoA dioxygenase (PubMed:10521434, PubMed:19935646). Plays a critical role in the generation of NADPH, an important cofactor in many biosynthesis pathways (PubMed:10521434). May act as a corneal epithelial crystallin and may be involved in maintaining corneal epithelial transparency (By similarity).

Cellular Location Cytoplasm, cytosol. Peroxisome

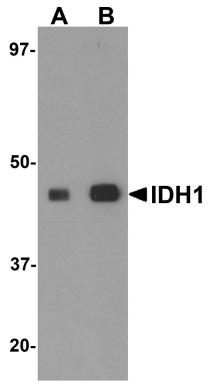
Background

IDH1 Antibody: 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(+). Two NADP(+)-dependent isocitrate dehydrogenases have been found as homodimer: IDH1 is predominantly cytosolic and peroxisomal and IDH2 is mitochondrial. The presence of IDH1 in peroxisomes suggests it may play a role 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 IDH1 serves a significant role in cytoplasmic NADPH production. Defects in IDH1 are involved in the development of glioma.

References

Geisbrecht BV and Gould SJ. The human PICD gene encodes a cytoplasmic and peroxisomal NADP(+)-dependent isocitrate dehydrogenase. J. Biol. Chem.1999; 274:30527-33.
Xu X, Zhao J, Xu Z, et al. Structures of human cytosolic NADP-dependent isocitrate dehydrogenase reveal a novel self-regulatory mechanism of activity. J. Biol. Chem.2004; 279:33946-57.
Dang L, White DW, and Gross S. Cancer-associated IDH1 mutations produce 2-hydroxyglutarate. Nature2009; 462:739-44.
Smeitink J. Metabolism, gliomas, and IDH1. N. Engl. J. Med.2010; 362:1144-5.

Images



Western blot analysis of IDH1 in HepG2 cell lysate with IDH1 antibody at (A) 1 and (B) 2 µg/mL.