Revision 4

Store at -20C

#8137

IDH1 (D2H1) Rabbit mAb

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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, IF-IC, FC-FP	H M R Mk	Endogenous	46	Rabbit IgG	#O75874	3417

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50
Immunofluorescence (Immunocytochemistry)	1:400
Flow Cytometry (Fixed/Permeabilized)	1:200

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

For a carrier free (BSA and azide free) version of this product see product #55269.

Specificity/Sensitivity

IDH1 (D2H1) Rabbit mAb recognizes endogenous levels of total IDH1 protein. This antibody does not recognize endogenous IDH2 protein, but does recognize IDH2 when recombinantly overexpresssed.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Arg222 of human IDH1 protein.

Background

IDH1 is one of three isocitrate dehydrogenases that catalyze the oxidative decarboxylation of isocitrate to α-ketoglutarate (α-KG). These enzymes exist in two distinct subclasses that utilize either NAD or $NADP^+$ respectively, as an electron acceptor (1). IDH1 is the $NADP^+$-dependent isocitrate dehydrogenase found in the cytoplasm and peroxisomes. IDH2 and 3 are mitochondrial enzymes that also function in the Krebs cycle. IDH1 is inactivated by phosphorylation at Ser113 and contains a clasp-like domain wherein both polypeptide chains in the dimer interlock (2,3). IDH1 is expressed in a wide range of species and also in organisms that lack a complete citric acid cycle. Mutations in IDH1 have been reported in glioblastoma (4), acute myeloid leukemia (5,6), and other malignancies (7). IDH1 appears to function as a tumor suppressor that, when mutationally inactivated, contributes to tumorigenesis in part through induction of the HIF-1 pathway (8).

Background References

1. Ramachandran, N. and Colman, R.F. (1980) *J Biol Chem* 255, 8859-64.
2. Bennett, P.M. and Holms, W.H. (1975) *J Gen Microbiol* 87, 37-51.
3. Hurley, J.H. et al. (1990) *Science* 249, 1012-6.
4. Bleeker, F.E. et al. (2009) *Hum Mutat* 30, 7-11.
5. Abbas, S. et al. (2010) *Blood* 116, 2122-6.
6. Paschka, P. et al. (2010) *J Clin Oncol* 28, 3636-43.
7. Watanabe, T. et al. (2009) *Am J Pathol* 174, 1149-53.
8. Zhao, S. et al. (2009) *Science* 324, 261-5.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

W: Western Blotting **IP:** Immunoprecipitation **IF-IC:** Immunofluorescence (Immunocytochemistry) **FC-FP:** Flow Cytometry (Fixed/Permeabilized)

Cross-Reactivity Key

H: Human **M:** Mouse **R:** Rat **Mk:** Monkey

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