

Mouse Anti-IDH1 (Isocitrate Dehydrogenase 1) [IDH/1152]: MC0065, MC0065RTU7

Intended Use: For Research Use Only

Description: Isocitrate dehydrogenases catalyze the oxidative decarboxylation of isocitrate to 2-oxoglutarate. These enzymes belong to two distinct subclasses that utilize either NAD or NADP⁺ as an electron acceptor. 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 found in predominantly cytoplasm and peroxisomes (IDH1) and the other mitochondrial (IDH2). IDH1 and IDH2 are homodimers and key enzymes linking cellular metabolism to epigenetic regulation and redox states. IDH1, a 45kDa protein, catalyzes the third step of the citric acid cycle, which involves the oxidative decarboxylation of isocitrate, forming alpha-ketoglutarate and CO₂ in a two-step reaction. The first step involves the oxidation of isocitrate to the intermediate oxalosuccinate, while the second step involves the production of alpha-ketoglutarate. During this process, either NADH or NADPH is produced along with CO₂. IDH1 appears to function as a tumor suppressor that, when mutationally inactivated, contributes to tumorigenesis in part through induction of the HIF-1 pathway. This antibody recognizes wild-type IDH1. Recent studies show that primary glioblastoma increases expression of wild-type IDH1, which confers therapeutic resistance.

Specifications

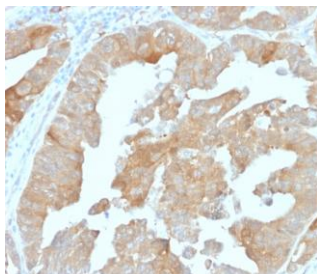
Clone:	IDH/1152
Source:	Mouse
Isotype:	IgG1k
Reactivity:	Human
Immunogen:	Recombinant fragment of human IDH1 protein aa 281-414
Localization:	Cytoplasm, peroxisome
Formulation:	Purified antibody in PBS pH9.0, containing BSA and ≤ 0.09% sodium azide (NaN ₃)
Storage:	Store at 2°- 8°C
Applications:	IHC, Flow Cyt, ICC/IF, WB
Package:	

Description	Catalog No.	Size
IDH1 (Isocitrate Dehydrogenase 1) Concentrated	MC0065	1 ml
IDH1 (Isocitrate Dehydrogenase 1) Prediluted	MC0065RTU7	7 ml

IHC Procedure*

Positive Control Tissue:	Breast, colon or prostate carcinoma, HepG2, HeLa, HT29 or MCF7 cells.
Concentrated Dilution:	50-200
Pretreatment:	Tris EDTA pH9.0, 15 minutes Pressure Cooker or 30-60 minutes water bath at 95°-99°C
Incubation Time and Temp:	30-60 minutes @ RT
Detection:	Refer to the detection system manual

* Result should be confirmed by an established diagnostic procedure.



FFPE human prostate carcinoma stained with anti-IDH1 using DAB

References

1. Radioprotection of IDH1-Mutated Cancer Cells by the IDH1-Mutant Inhibitor AGI-5198. Molenaar RJ, et al. Cancer Res. Nov 15;75(22):4790-802, 2015.
2. Comparison of immunohistochemistry, DNA sequencing and allele-specific PCR for the detection of IDH1 mutations in gliomas. Loussouarn D, et al. Int J Oncol. Jun;40(6):2058-62, 2012.

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