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DATA SHEET

Mouse Anti-IDH1-R132H (Isocitrate Dehydrogenase-R132H) [H09]: MC0105-0.1, MC0105RTU7

Intended Use: For Research Use Only

Description: Eukaryotic cells express three forms of isocitrate dehydrogenase (IDH). These enzymes catalyze the oxidative decarboxylation of isocitrate into a-ketoglutarate (aKG) utilizing either NAD or NADP as cosubstrates. A member of this family, IDH1, is the human cytoplasmic NADP-specific enzyme. Its subcellular localization was shown to be in both peroxisomes and the cytoplasm. Although the function and structure of the protein has been well characterized, mutations in the gene have only recently been implicated in cancer after a genome-wide mutation study of giloblastomas, acute myeloid leukemias (AML) and chondrosarcomas. Mutations in IDH1 are specific to Arg132 (R132) and endow them with the function of generating 2-hydroxyglutarate (2HG) instead of aKG. This product alters gene transcription through effects on DNA and histone methylation. Several IDH1 mutations exist, including R132H, R132C, R132S, R132G and R132L. Each may result in different tumor type with varied malignant progression. The most frequent known mutation (>90%) is the alteration of arginine to histidine (R132H). Hence, antibodies that recognize the IDH1R132H mutation can be useful for the detection of mutation-bearing tumors like gliomas. The high frequency of IDH1 R132H mutation in lowgrade and anaplastic gliomas and secondary glioblastomas correlates with favorable patient survival times. Rational IDH1 R132H testing supports neuropathological differential assay. The high frequency and distribution of the IDH1 R132H mutation among specific brain tumor entities allow the highly sensitive and specific discrimination of various tumors by immunohistochemistry, such as anaplastic astrocytoma from primary glioblastoma or diffuse astrocytoma WHO grade II from pilocytic astrocytoma or ependymoma. Noteworthy is the discrimination of the infiltrating edge of tumors with IDH1 mutation from reactive gliosis.

Specifications

Clone:	H09
Source:	Mouse
Isotype:	IgG2a
Reactivity:	Human
Immunogen:	Synthetic peptide amino acid sequence CKPIIIGHHAYGD
Localization:	Cytoplasm
Formulation:	Antibody in PBS pH7.4, containing BSA and ≤ 0.09% sodium azide (NaN3)
Storage:	Store at 2°- 8°C
Applications:	IHC, WB

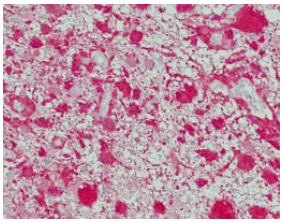
Package:

Description	Catalog No.	Size
IDH1-R132H Concentrated	MC0105-0.1	0.1ml
IDH1-R132H Prediluted	MC0105RTU7	7ml

IHC Procedure*

Positive Control Tissue:	Oligodendroglioma, diffuse astrocytoma
Concentrated Dilution:	10-30
Pretreatment:	Citrate pH6.0 or EDTA pH8.0, 15 minutes using Pressure Cooker, or 30-60 minutes using 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 brain stained with anti-IDH1-R132H using AEC

References

1. Combined "Infiltrating Astrocytoma/Pleomorphic Xanthoastrocytoma" Harboring IDH1 R132H and BRAF V600E Mutations. Yamada S, et al. Am J Surg Pathol. Feb;40(2):279-84, 2016.
2. A high-sensitive HMab-2 specifically detects IDH1-R132H, the most common IDH mutation in gliomas. Fujii Y, et al. Biochem Biophys Res Commun. Oct 30;466(4):733-9, 2015.

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