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# Anti-IDH1 R132H / DIA-H09-L RTU

## Mouse monoclonal anti-brain tumor marker (Astrocytoma, Oligodendroglioma), Clone H09

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### Product Information

<b>Catalog No.:</b>	<b>DIA-H09-L</b> 7ml prediluted, ready to use (RTU)	<b>Visualization:</b>	Cytoplasmic
<b>Clone:</b>	H09	<b>Presentation:</b>	Prediluted antibody purified from culture supernatant in PBS with 2% BSA, 0.05% NaN <sub>3</sub> , pH 7.4.
<b>Isotype:</b>	Mouse IgG2a	<b>Applications:</b>	Immunohistochemistry (standard formalin-fixed paraffin sections)
<b>Specificity:</b>	Human IDH1 R132H point mutation	<b>Dilutions:</b>	No further dilution is required for Immunohistochemistry (IHC, FFPE) (Positive/negative controls should be run simultaneously with tissue specimen)
<b>Immunogen:</b>	Synthetic peptide, amino acid sequence CKPIIIGHHAYGD	<b>Associated Antibody:</b>	DIA-AX1, anti-ATRX, clone AX1
<b>Physical State:</b>	Liquid, prediluted, 7ml		
<b>Species:</b>	Human		
<b>Reactivity:</b>			
<b>Positive Control:</b>	Oligodendroglioma, diffuse astrocytoma		
<b>Negative Control:</b>	Pilocytic astrocytoma, primary glioblastoma (ca. 95% of cases negative)		

### Reactivity

Antibody clone H09 reacts specifically with the isocitrate dehydrogenase 1 (IDH1) R132H point mutation in tissue sections from formalin-fixed brain tumor specimens. Heterozygous point mutations of IDH1 codon 132 are frequent in World Health Organization (WHO) grade II and III gliomas. IDH1 R132H mutations occur in approximately 70% of astrocytomas and oligodendroglial tumors. 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. This antibody is highly useful for tumor classification and in detecting single infiltrating tumor cells. The routine practical approach for diagnosing astrocytomas and oligodendrogliomas begins with performing IHC for IDH1 R132H and ATRX expression (Reuss et al., 2015).

### Instructions for Use

#### Immunohistochemical staining of standard formalin-fixed paraffin sections

Deparaffinize and rehydrate according to standard procedures. Recommended for manual staining procedures and heat induced antigen retrieval with citrate buffer pH 6.0. For immunohistochemical detection follow the instructions provided with the particular visualization system. This antibody has been pretitered and quality controlled on FFPE tissue sections following a standard protocol on Ventana Benchmark XT stainer (pretreatment CC1 mild, detection DAB ultraView kit). No further dilution is required.

#### Technical note

Diffuse astrocytoma WHO grade II may have low protein-expression. At high dilution of the antibody single tumor cells in the infiltration zone may not be stained.

### Storage and Stability

The stability of the liquid H09 antibody has been tested intensively. This liquid antibody formulation is highly stable even at room temperature for several weeks. We recommend to store liquid antibody at 2-8°C for several months.

### Safety Notes

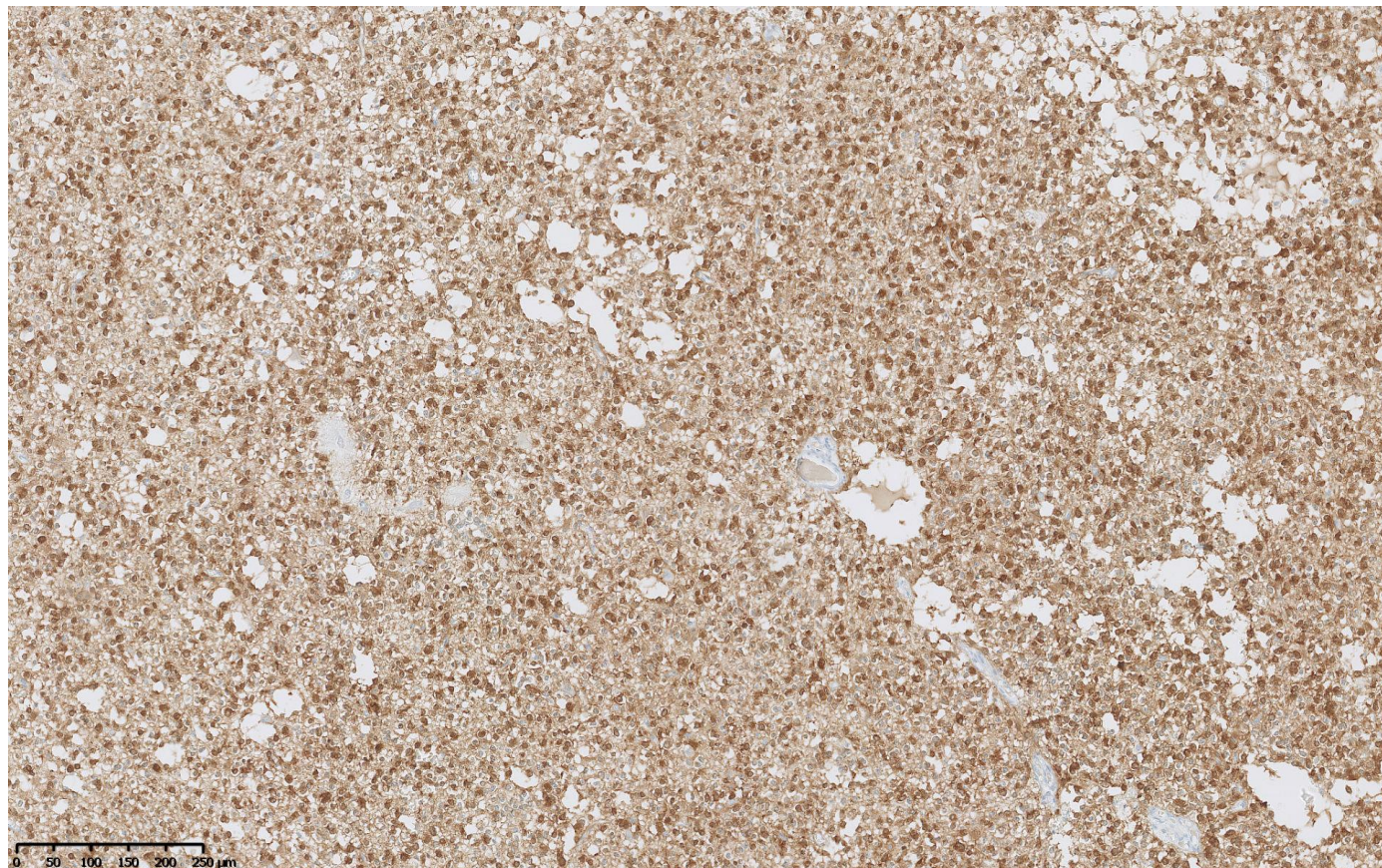
The material contains 0.05% sodium azide as preservative. Although the quantity of azide is very small, appropriate care should be taken when handling this material. Avoid skin and eye contact, inhalation, and ingestion.

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## Immunohistochemistry of human IDH1 R132H in formalin-fixed paraffin-embedded brain tissue sections

Strong reaction of prediluted anti-IDH1 mutation specific antibody lone H09 with IDH1 R132H mutated glioma following a standard protocol for Ventana Benchmark XT automated stainer: Pretreatment CC1 mild, detection: DAB ultraView kit.



### References

1. Capper D et al. Monoclonal antibody specific for IDH1 R132H mutation. *Acta Neuropathol.* 118(5): 599-601, 2009
2. Capper D et al. Characterization of R132H mutation-specific IDH1 antibody binding in brain tumors. *Brain Pathol.* 20(1): 245-254, 2010
3. Preusser M et al. IDH testing in diagnostic neuropathology: review and practical guideline article invited by the Euro-CNS research committee. *Clinical Neuropathology*, 30(5):217-230, 2011
4. Van den Bent MJ et al. Interlaboratory comparison of IDH mutation detection. *J Neurooncol* 112:173–178, 2013
5. Schumacher T et al. A vaccine targeting mutant IDH1 induces antitumour immunity. *Nature* 512: 324-327, 2014
6. Reuss et al. ATRX and IDH1-R132H immunohistochemistry with subsequent copy number analysis and IDH sequencing as a basis for an "integrated" diagnostic approach for adult astrocytoma, oligodendroglioma and glioblastoma. *Acta Neuropathol.* 129(1):133-146, 2015
7. David NL et al. The 2016 World Health Organization Classification of Tumors of the Central Nervous System: a summary. *Acta Neuropathol.*, 131:803-820, 2016

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