Anti-ATRX / DIA-AX1
Mouse monoclonal anti-brain tumor marker (Astrocytoma, Oligodendroglioma), Clone AX1

Product Information

Catalog No.:	**DIA-AX1** (100µg)
Clone:	AX1
Concentration:	0.2 mg/ml
Isotype:	Mouse IgG1/k
Specificity:	ATRX
Immunogen:	Recombinant protein fragment of human ATRX
Physical State:	Lyophilized powder
Species Reactivity:	Human
Positive Control:	1p/19q co-deleted glioma
Negative Control:	Glioma with intact 1p/19q chromosomes
Visualization:	Nuclear

Reconstitution:	DIA-AX1 (100µg), restore to 500 µl Reconstitute with sterile distilled water by gentle shaking for 10 minutes
Presentation:	In PBS with 2% BSA, 0.05% NaN3, pH 7.4. Antibody purified from culture supernatant
Applications:	Immunohistochemistry (IHC), standard formalin-fixed paraffin sections
Dilutions:	1:100 - 1:200 IHC-P (General recommendation, validation of antibody performance/protocol is the responsibility of the end user. Positive/negative controls should be run simultaneously with patient specimen. Interpretation must be made by a qualified pathologist within the context of patient's clinical history/other diagnostic tests.)

Associated Antibody: DIA-H09, anti-IDH1 R132H, clone H09

Reactivity

Antibody clone AX1 reacts specifically with ATRX in tissue sections from standard formalin-fixed brain tumor specimens.
ATRX is a member of the Snf2 family of helicases/ATPases, which contribute to the remodeling of nucleosome structure. ATRX mutation, IDH1 mutation and chromosomal 1p/19q co-deletion are key molecular factors for the subtype diagnosis of diffuse gliomas. ATRX mutations in gliomas result in the loss of nuclear ATRX expression, which can be diagnosed by IHC analysis. Loss of ATRX expression is close to being mutually exclusive to 1p/19q co-deletion. Consequently, ATRX immunohistochemistry can be performed to replace laborious analysis of 1p/19q status by FISH techniques.
Combined immunohistochemistry of ATRX and IDH1R132H substitutes molecular testing. Astrocytoma very often harbour ATRX-mutations (>90%), wheras Oligodendroglioma typically do not (<5%). The routine practical approach for diagnosing astrocytomas and oligodendrogliomas begins with perfoming IHC for ATRX and IDH1 R132H expression. Stepwise analysis of molecular parameters with initial IHC for ATRX and IDH1 R132H followed by 1p/19q analysis and then by IDH sequencing significantly reduces the number of molecular tests required for unequivocal diagnosis (Reuss et al., 2015).

Instructions for Use

Immunohistochemical staining of standard formalin-fixed paraffin sections

Deparaffinize and rehydrate according to standard procedures. Heat induced epitope retrieval (HIER) is required. For immunohistochemical detection different techniques can be used: Indirect immunoenzyme labeling with a secondary antibody conjugate, biotin/(strept)avidin-based detection, soluble enzyme immune complex or polymer-based detection. To detect antibody, follow the instructions provided with the particular visualization system. The antibody is suited for immuno-histochemical staining using automated platforms. Use the antibody at 1:100 -1:200 dilution for 30min at RT.

Intented use / regulatory status

Europe: For in Vitro Diagnostic Use / All other countries: For Research Use only

Storage and Stability

Store the lyophilized antibody at 2-8°C. For long time storage freeze at -20°C, thus the antibody is stable for at least one year. As reconstituted liquid store at 2-8°C short term (several weeks). For long term storage aliquot and freeze at -20°C or -80°C. Avoid repeated freeze / thaw cycles.

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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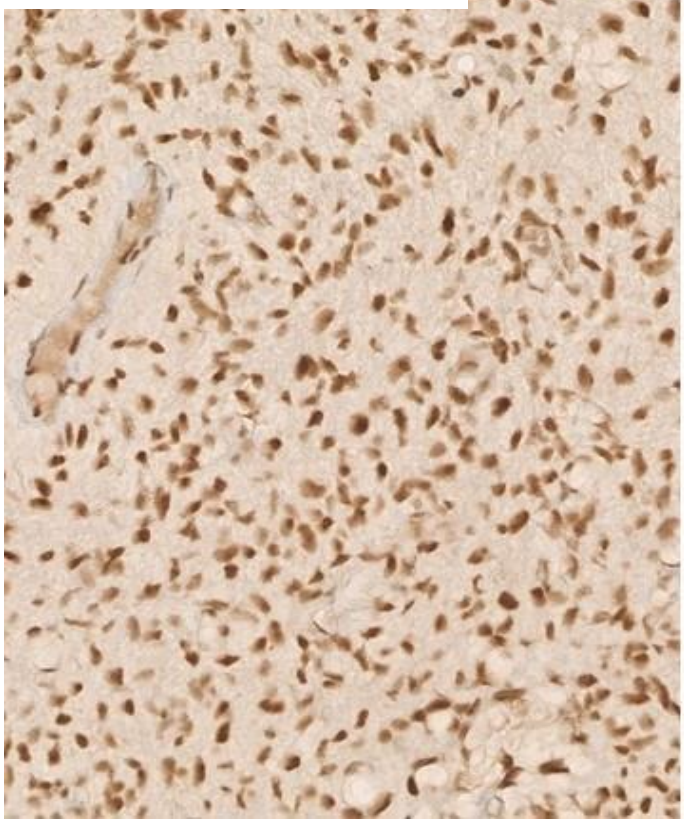
Figures

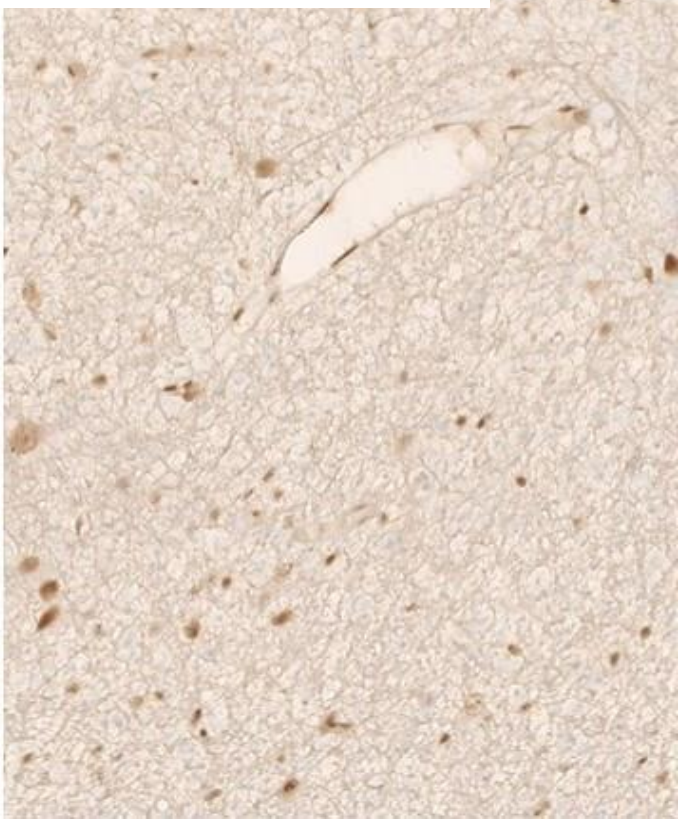
Immunohistochemistry of human ATRX in standard formalin-fixed paraffin-embedded glioma sections.
(pictures courtesy of Prof. Marcus Glatzel, Department of Neuropathology, University Hospital Eppendorf, Hamburg, Germany)

A: Strong nuclear reaction of anti-ATRX antibody clone AX1 in 1p/19q co-deleted glioma.
B: Loss of nuclear ATRX protein expression in glioma with intact 1p/19q documented by anti-ATRX immunohistochemistry.

(A) ATRX stain in 1p/19q-deleted glioma



(B) ATRX loss in glioma with intact 1p/19q



References for clone AX1

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2. Escoll, M. et al. Transcription factor NRF2 uses the Hippo pathway effector TAZ to induce tumorigenesis in glioblastomas. Redox Biology 30, 101425 (2020).

General references

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2. Leeper HE et al. IDH mutation, 1p19q codeletion and ATRX loss in WHO grade II gliomas. *Oncotarget* 6: 30295-05, 2015
3. Cai J et al. Detection of ATRX and IDH1-R132H immunohistochemistry in the progression of 211 paired gliomas. *Oncotarget* 7(13): 16384-95, 2016
4. Takano S et al. Immunohistochemistry on IDH 1/2, ATRX, p53 and Ki-67 substitute molecular genetic testing and predict patient prognosis in grade III adult diffuse gliomas. *Brain Tumor Pathol*. 33(2):107-116, 2016
5. Ebrahimi A et al. ATRX immunostaining predicts IDH and H3F3A status in gliomas. *Acta Neuropathol Commun.* 4:60, 2016
6. Liu N et al. Immunostaining of IDH1 R132H and ATRX proteins in the classification of adult glioblastomas. *Int J Clin Exp Pathol* 9(12): 12849-54, 2016

Symbols

	Manufacturer	IVD	For In vitro Diagnostic Use	CE	Conformity with IVDD 98/79/EC

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