

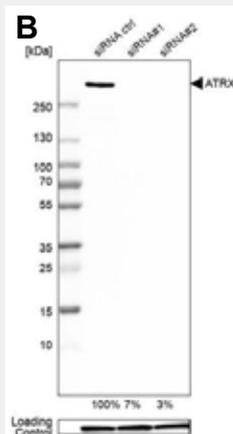
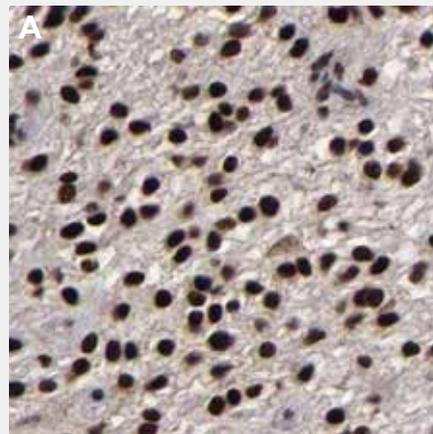
## ATRX, a marker for glioma

### ATRX function

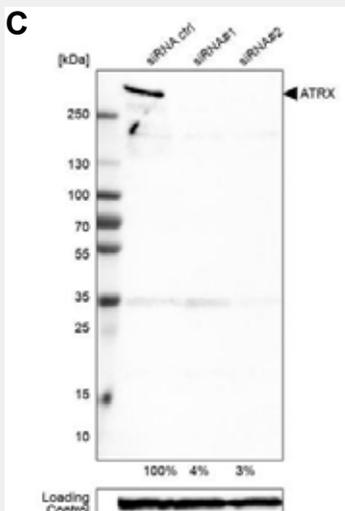
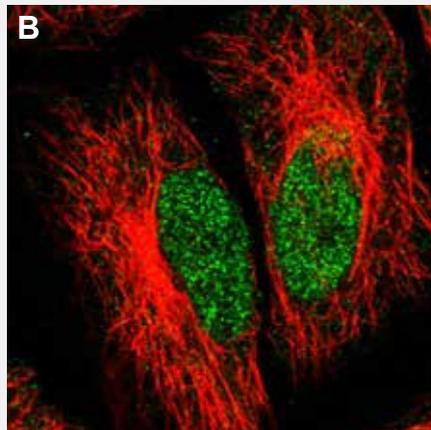
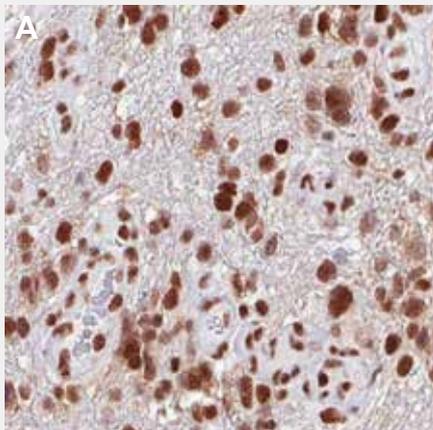
The protein encoded by the ATRX gene belongs to a chromatin-remodeling pathway (H3.3-ATRX-DAXX) and is required for the incorporation of H3.3 in chromatin.

Mutations in this gene are associated with diverse changes in pattern of DNA methylation, chromosome congression during mitosis, and segregation in meiosis as well as telomere dysfunction.<sup>1</sup>

These changes may provide a link between chromatin remodeling, DNA methylation, and gene expression in developmental processes [provided by RefSeq, Jul 2017]. Phenotypically, the mutations result in several characteristic developmental abnormalities such as mental retardation, facial dysmorphism and alpha-thalassemia (ATRX) syndrome.<sup>1</sup>



(A) Immunohistochemical staining of human glioma tissue using HPA001906 shows strong nuclear immunoreactivity in cancer cells. (B) Western blot analysis in A-549 cells transfected with control siRNA, target specific siRNA probe #1 and #2, using Anti-ATRX antibody. Remaining relative intensity is presented. Loading control: Anti-GAPDH.



(A) Immunohistochemical staining of human brain (high grade glioma) using AMAb90784 shows strong nuclear immunoreactivity in cancer cells. (B) Immunofluorescence staining in HeLa cell line with AMAb90784 shows clear nuclear (without nucleoli) staining in green. Microtubule probe is visualized in red. (C) Western blot analysis in A-549 cells transfected with control siRNA, target specific siRNA probe #1 and #2, using Anti-ATRX antibody. Remaining relative intensity is presented. Loading control: Anti-GAPDH.



### References

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- Oktay Y *et al.*, IDH-mutant glioma specific association of rs55705857 located at 8q24.21 involves MYC deregulation *Sci Rep* , 2016 Jun 10; 6:27569.
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### ATRX, a marker for glioma

Around 2012, several research groups worldwide started to study the potential link between ATRX and glioma.

In this paper<sup>1</sup> the authors summarized the recent studies and the correlations that had been made between different markers such as IDH1, p53, 1p/19q and ATRX with different types of glioma.

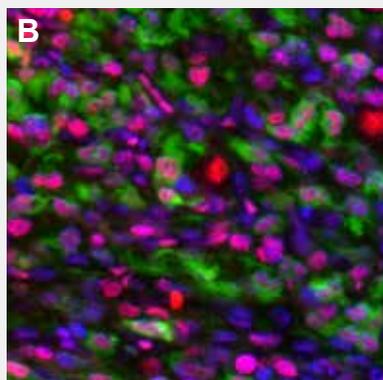
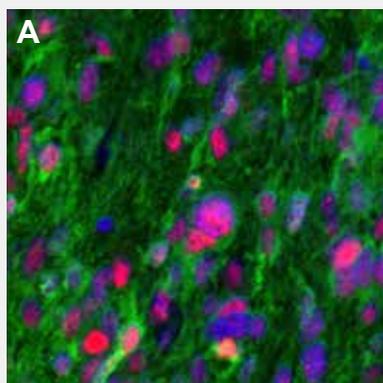
The paper concluded that depending on mutations in IDH1, 1p/19q and ATRX, gliomas could be classified into three groups:

Molecular **Astrocytomas**  
 Molecular **Oligodendrogliomas**  
 Molecular **Glioblastomas**

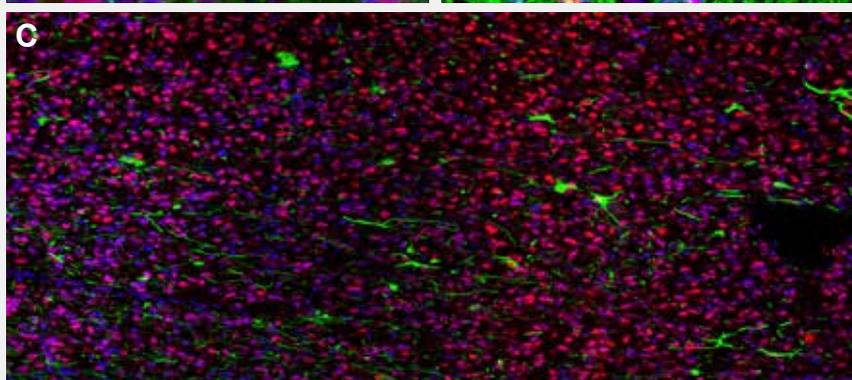
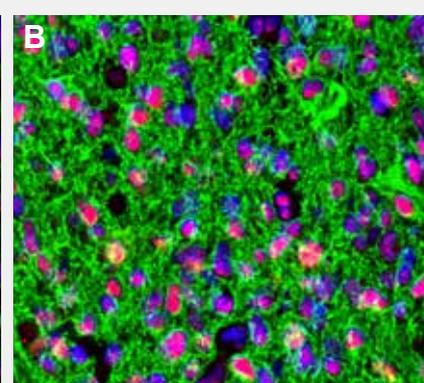
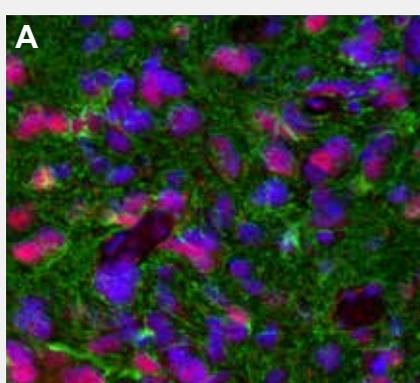
ATRX has now become a routine marker for classification of gliomas and is most often used in combination with various

other markers such as IDH1<sup>1-7</sup>, P53<sup>2,3,4,7</sup>, PARP1<sup>3</sup>, GFAP<sup>6</sup>, KI-67<sup>2</sup> and EGFR<sup>2</sup>.

The images below show examples of immunohistochemical stainings of select cases of glioblastomas, astrocytomas and oligodendrogliomas using antibodies for ATRX, IDH1 and GFAP.



Multiplexed IHC-IF staining of glioblastoma multiforme (A) and oligodendroglioma (B) shows ATRX (red) and IDH1 (green) immunoreactivity in tumor cells using Anti-ATRX antibody (A: HPA001906, B: AMAb90784) and Anti-IDH1 antibody (AMAb90578). Nuclei are counterstained with DAPI.



Multiplexed IHC-IF staining of glioblastoma multiforme (A), astrocytoma (B) and oligodendroglioma (C) shows ATRX (nuclear, red) and GFAP (cytoplasmic, green) immunoreactivity in tumor cells using Anti-ATRX antibody (AMAb90784) and Anti-GFAP antibody (AMAb91033). Nuclei are counterstained with DAPI.



Product Name	Catalog No	Application	Sequence Identity Mouse/Rat
Anti-ATRX	AMAb90784	IHC, WB*, ICC-IF	96%/97%
Anti-ATRX	HPA001906	IHC*, WB*	96%/97%
Anti-ATRX	HPA064684	ICC-IF	51%/57%
Anti-IDH1	AMAb90578	IHC, WB*, ICC-IF	95%/95%
Anti-IDH1	HPA035248	IHC*, WB*	95%/95%
Anti-IDH1	HPA057936	IHC*, WB*	92%/95%
Anti-GFAP	AMAb91033	IHC*, WB*	98%/100%
Anti-GFAP	HPA056030	IHC*, WB, ICC-IF	98%/100%
Anti-GFAP	HPA063513	IHC*	100%/98%

\* Products with enhanced validation for indicated application

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