

## New Antibodies for the Diagnosis of Diffuse Glioma

*ATRX and IDH1 mutations as well as chromosomal 1p/19q co-deletions are key molecular factors for the subtype diagnosis of diffuse gliomas.*

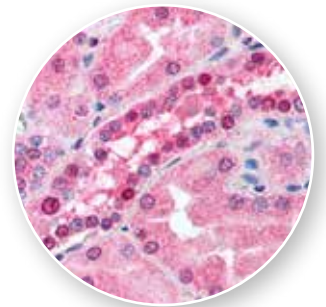
### ► ATRX

ATRX, also known as ATP-dependent helicase ATRX, X-linked helicase II, or X-linked nuclear protein (XNP), belongs to the SWI/SNF family of chromatin remodeling proteins. ATRX mutations in gli-

omas result in the loss of nuclear ATRX expression, which can be diagnosed by IHC analysis. There is good concordance between IHC results and ATRX mutation status.

### ► Product description

Description	Status	Format	Dilution	Volume	Cat. No.
<b>ATRX</b> Clone: 60.1 Host: Mouse	RUO	Concentrate	1:200	50 µg (1 mg/ml)	101-0630



ATRX on human kidney

### ► IDH1

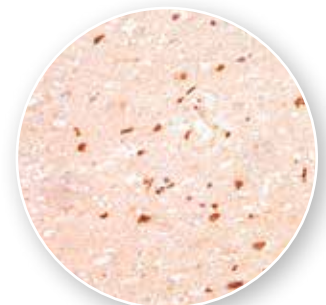
Isocitrate dehydrogenase 1 mutations have recently been identified to occur in a highly restricted tumor spectrum and cell types including gliomas, prostate cancer, cartilaginous tumors, or AML. The most notable mutation, R132H, is clinically indicated in the majority of astrocytomas and oligodendroglial tumors, with the mutation being associated with more favourable prognosis and increased survival in those patients. IDH1 R132H is also useful in the differential diagnosis between anaplastic glioma and glioblastoma.

Antibodies specifically recognizing the mutant IDH1 R132H protein make it possible to identify the IDH1 mutation through conventional immunohistochemistry.

A stepwise analysis with initial immunohistochemistry for ATRX and IDH1 R132H being followed by 1p/19q analysis then by IDH sequencing has been described as beneficial approach, which reduces the number of molecular analyses and which has a far better association with patient outcome.

### ► Product description

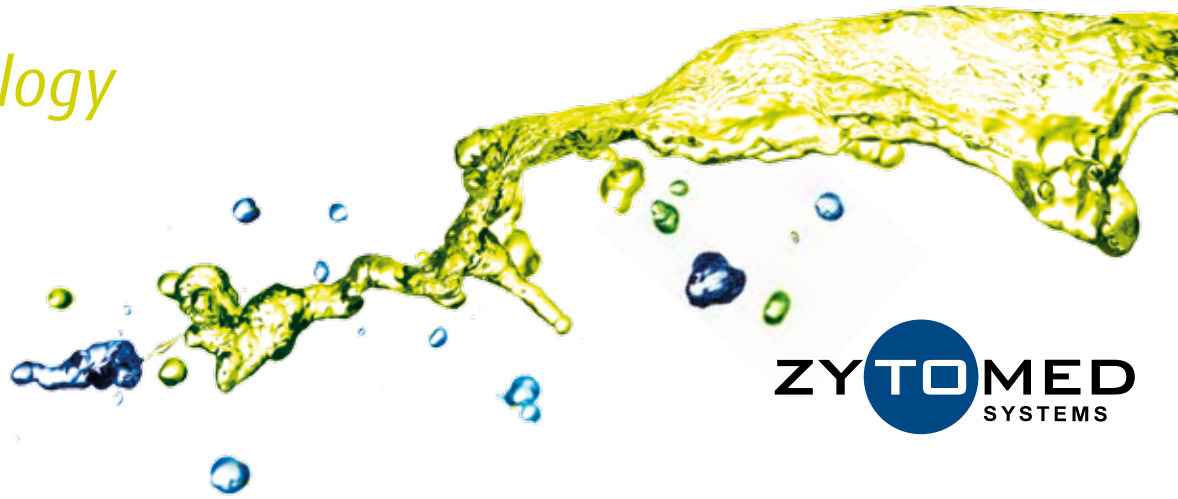
Description	Status	Format	Dilution	Volume	Cat. No.
<b>IDH1 R132H</b> Clone: IHC132 Host: Mouse	RUO	Ready-to-use	-	6 ml	MSG118
		Concentrate	1:100 - 1:200	0.1 ml	MSK118-01
				0.5 ml	MSK118-05



IDH1 R132H on astrocytoma

# Immunohistology

## Glioma

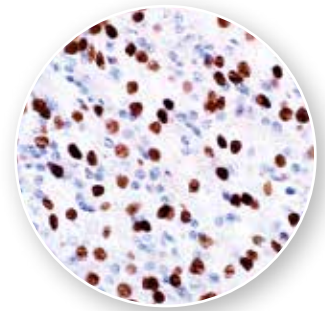


### ► Olig2

Oligodendrocyte Lineage Transcription Factor 2, a basic helix-loop-helix transcription factor, plays a key role in oligodendrocyte and motor neuron differentiation.

Olig2 is universally expressed in glioblastomas and other diffuse gliomas such as astrocytomas, oligodendrogliomas, and oligoastrocytoma, making it a useful positive diagnostic marker of these brain tu-

mors. In particular, Olig2 is selectively expressed in a subgroup of glioma cells that are highly tumorigenic. Non-glial tumors, such as neuroepithelial tumors, ependymomas, and neurocytomas express little or no Olig2. Anti-Olig2 antibody is more specific to gliomas than the commonly used anti-GFAP and therefore represents an ideal complement of the antibody panel for the diagnosis of diffuse glioma.



Olig2  
on oligodendroglioma

### ► Product description

Description	Method	Format	Dilution	Volume	Cat. No.	Status
<b>Olig2</b> Clone: 211F1.1 Host: Mouse	P	Ready-to-use	-	6 ml	MSG115	CE/IVD
		Concentrate	1:25 – 1:100	0.5 ml	MSK115-05	

### ► Literature

Wesseling P *et al.* Oligodendroglioma: pathology, molecular mechanisms and markers. *Acta Neuropathol* 129:809-827, 2015

Takano S *et al.* Detection of IDH1 mutation in human gliomas: comparison of immunohistochemistry and sequencing. *Brain Tumor Pathol* 28: 115-123, 2011

Yang H *et al.* IDH1 and IDH2 mutations in tumorigenesis: mechanistic insights and clinical perspectives. *Clin Cancer Res* 18: 5562-5571, 2012

Reuss DE *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: 133-146, 2015

Otero JJ *et al.* OLIG2 is differentially expressed in pediatric astrocytic and in ependymal neoplasms. *J Neurooncol* 104:423-438, 2011

Švajdler M *et al.* SOX10 and Olig2 as negative markers for the diagnosis of ependymomas: An immunohistochemical study of 98 glial tumors. *Histol Histopathol* 31:95-102, 2016

Durand KS *et al.* 1p19q LOH patterns and expression of p53 and Olig2 in gliomas: relation with histological types and prognosis. *Mod Pathol* 23:619-628, 2010