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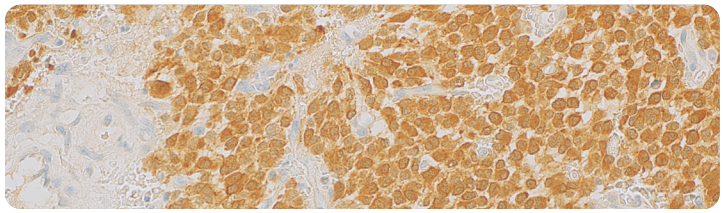
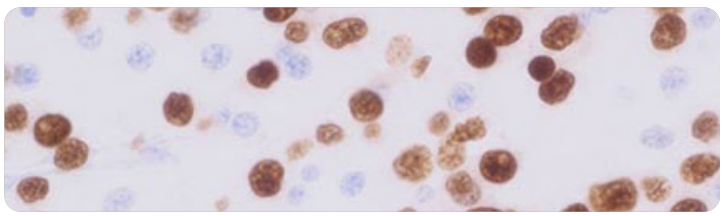
# Cell Marque™ Tissue Diagnostics
# Neuropathology



## IDH1 R132H (MRQ-67)

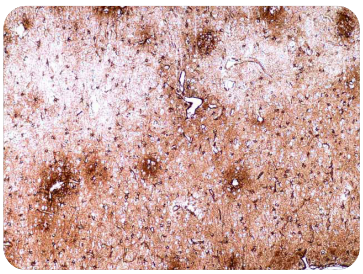
Isocitrate dehydrogenase 1 (IDH1) functions as an enzyme in the Krebs (citric acid) cycle and is biologically active in the cytoplasmic and peroxisomal compartments under normal conditions. The occurrence of heterozygous missense mutations at an arginine residue at codon 132 (R132) within the coding region for the substrate binding site of IDH1 has been described to promote oncogenesis in several malignancies. Of the identified mutant variants, a histidine substitution (R132H) is one of the more frequently observed point mutations in certain tumor groups of gliomas. Mutations involving IDH1 have been implicated as early events during gliomagenesis and IDH1 mutation status was incorporated into the 2016 WHO Classification of Tumors of the Central Nervous System as a new parameter for sub-classifying diffuse astrocytic and oligodendroglial tumors. Immunohistochemical identification of IDH1 R132H immunoreactivity can be used as a tool in screening tumors that may be harboring this mutation, such as low grade diffuse and anaplastic astrocytomas, oligodendrogliomas, and secondary glioblastomas.



## Olig2 (EP112)

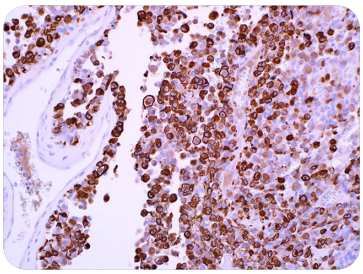
Olig2, a basic helix–loop–helix transcription factor, is involved in oligodendroglial specification. Olig2 expression has been reported in most glial tumors, such as oligodendrogliomas and astrocytomas. Although more than half of glioblastomas are positive for Olig2, expression is very weak in terms of both percentage of labeled cells and intensity. No Olig2 expression has been found in the non-glial tumors including neuroepithelial tumors, ependymomas, subependymomas, medulloblastomas, and non-neuroepithelial tumors, such as CNS lymphomas, meningiomas, schwannomas, atypical teratoid/rhabdoid tumor, and hemangioblastomas. Compared to the strong staining seen in glioma samples, a weak expression is observed in non-tumoral brain tissue (gliosis).

# Neuropathology



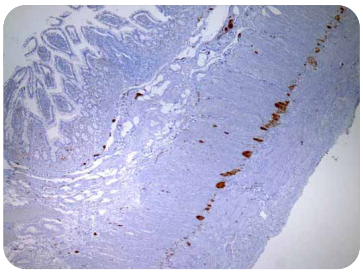
## Glial Fibrillary Acidic Protein (GFAP) (EP672Y)

Anti-GFAP antibody detects astrocytes, Schwann cells, satellite cells, enteric glial cells, and some groups of ependymal cells. This marker is mainly used to distinguish neoplasms of astrocytic origin from other neoplasms in the central nervous system.



## Neurofilament (EP79)

Immunolabelling of neurofilaments (NF) is employed for study of nerve distribution of normal and abnormal tissues, and neuronal differentiation of neoplasms. NF are found in neuromas, ganglioneuromas, gangliogliomas, ganglioneuroblastomas, neuroblastomas, and retinoblastomas. Neurofilaments are also present in paragangliomas, as well as adrenal and extra-adrenal pheochromocytomas. Carcinoids, neuroendocrine carcinomas of the skin, and lung small cell carcinoma also express neurofilament.



## PGP 9.5 (polyclonal)

Protein gene product 9.5 (PGP 9.5), also known as ubiquitin carboxyl-terminal hydrolase-1 (UCHL-1), is a 27 kDa protein originally isolated from whole brain extracts. Although PGP 9.5 expression in normal tissues was originally felt to be strictly confined to neurons and neuroendocrine cells, it has been subsequently documented in others as well. A plethora of mesenchymal neoplasms have demonstrated PGP 9.5 expression.


**For full references and product details please see the product insert.**

**Intended Use:** These products herein are intended for laboratory use in the detection of their respective proteins in formalin-fixed, paraffin-embedded tissue stained in qualitative immunohistochemistry (IHC) testing. These products are not a stand-alone diagnostic, and cannot be used for diagnosis, treatment, prevention, or mitigation of disease.

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