GFAP
Mouse Monoclonal Antibody

MCA-5C10

Ordering Information
Web *www.encorbio.com*
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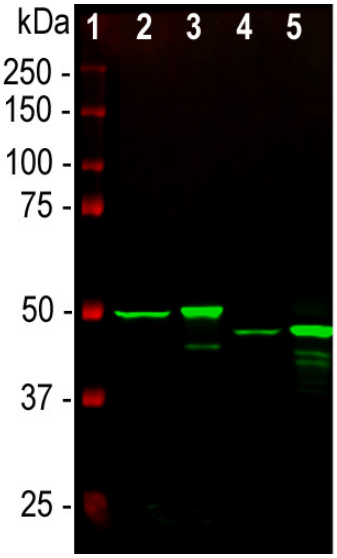
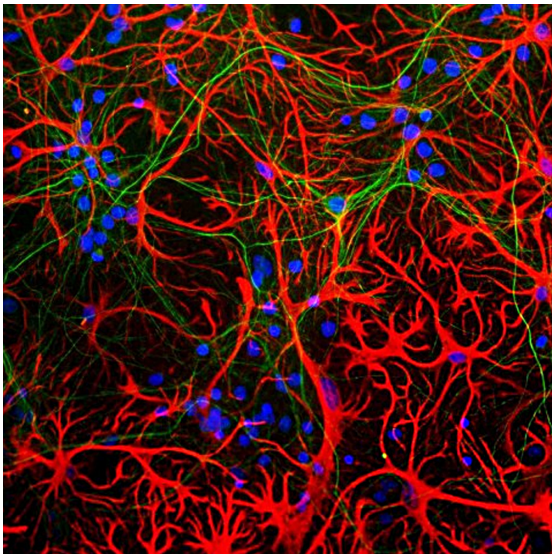
Phone *352-372-7022*
Fax *352-372-7066*

HGNC Name: *GFAP*
UniProt: *P14136*
RRID: *AB_2572311*
Immunogen: *Purified porcine spinal cord GFAP*
Format: *Purified at 1mg/mL in PBS, 50% glycerol, 5mM NaN_3*
Storage: *Store at 4°C for short term, for longer term at -20°C*
Recommended dilutions:
WB: 1:5,000. IF/ICC or IHC: 1:1,000.

Applications	Host	Isotype	Molecular Wt.	Species Cross-Reactivity
WB, IF/ICC, IHC	Mouse	IgG1 heavy, κ light	50kDa	Hu, Rt, Ms, Co, Pi, Ho



Western blot analysis of whole tissue lysates using mouse mAb to GFAP, MCA-5C10, dilution 1:2,000, in green: [1] protein standard (red), [2] rat brain, [3] rat spinal cord, [4] mouse brain, [5] mouse spinal cord. The strong band at about 50kDa corresponds to the GFAP protein.



Immunofluorescent analysis of cortical neuron-glial cell culture from E20 rat stained with mouse mAb to GFAP, MCA-5C10, dilution 1:1,000 in red, and costained with rabbit pAb to NF-L, CPCA-NF-L, dilution 1:2,000 in red. The blue is DAPI staining of nuclear DNA. The MCA-5C10 antibody stains astrocytes, while CPCA-NFL antibody reveals dendrites and axons of neurons.

Background:

Glial fibrillary acidic protein (GFAP) is strongly and specifically expressed in astrocytes, Bergmann glia, certain other glia in the central nervous system, in satellite cells in peripheral ganglia, and in non-myelinating Schwann cells in peripheral nerves. GFAP expression is also seen in developing neural stem cells and GFAP levels may greatly increase in regions of CNS injury or disease. The formation of a GFAP rich "glial scar" following CNS injury may be one reason why reconnection of severed processes is relatively inefficient in adults. Point mutations in the GFAP gene are causative of Alexander disease (5). All forms of Alexander disease are characterized by the presence of Rosenthal fibers, which are GFAP containing cytoplasmic inclusions found in astrocytes. Some interest has recently been focused on GFAP as a protein released into blood and CSF following traumatic brain injury, stroke and other CNS compromises (6,7). Measurement of the levels of blood or CSF GFAP may give information about patient presentation, progress, response to therapy or outcome.

MCA-5C10 antibody was made against purified GFAP from porcine spinal cord, EnCor product PROT-r-GFAP. High quality antibodies to GFAP such as MCA-5C10 are useful for visualizing glia and monitoring developmental, disease and damage related CNS alterations. This antibody has been shown to work well on western blots, IF, ICC and IHC and also to recognize GFAP from a variety of species. We also supply mouse monoclonal antibodies, MCA-2A5, MCA-3E10, as well as chicken, CPCA-GFAP, rabbit, RPCA-GFAP, and goat, GPCA-GFAP polyclonal antibodies.

References:

1. Bignami A, Eng LF, Dahl D, Uyeda CT. Localization of the glial fibrillary acidic protein in astrocytes by immunofluorescence. Brain Res. 43:429-35 (1972).
2. Yen SH, Fields KL. Antibodies to neurofilament, glial filament, and fibroblast intermediate filament proteins bind to different cell types of the nervous system. J Cell Biol. 88:115-26 (1981).
3. Shaw G, Osborn M, Weber K. An immunofluorescence microscopical study of the neurofilament triplet proteins, vimentin and glial fibrillary acidic protein within the adult rat brain. Eur. J. Cell Biol. 26:68-82 (1981).
4. Fitch MT, Silver J. CNS injury, glial scars, and inflammation: Inhibitory extracellular matrices and regeneration failure. Exp. Neurol. 209:294-301 (2008).
5. Brenner M, et al. Mutations in GFAP, encoding glial fibrillary acidic protein, are associated with Alexander disease. Nat. Genet. 27:117-20 2001.
6. Foerch, C. et al. Diagnostic accuracy of plasma glial fibrillary acidic protein for differentiating intracerebral hemorrhage and cerebral ischemia in patients with symptoms of acute stroke. Clin Chem. 58:237-45 (2011).
7. Schiff L, Hadker N, Weiser S, Rausch C. A literature review of the feasibility of glial fibrillary acidic protein as a biomarker for stroke and traumatic brain injury. Mol. Diagn. Ther. 16:79-92 (2012).

Recent peer reviewed publications using this antibody.

1. de Kloet AD, et al. Reporter mouse strain provides a novel look at angiotensin type-2 receptor distribution in the central nervous system. Brain Struct. Funct. 22:891-912 (2016).
2. Silva MC, et al. Human iPSC-Derived Neuronal Model of Tau-A152T Frontotemporal Dementia Reveals Tau-Mediated Mechanisms of Neuronal Vulnerability. Stem Cell Res. 7:325-40 (2016).
3. Edamakanti CR, et al. Mutant ataxin disrupts cerebellar development in spinocerebellar ataxia type 1 J. Clin. Invest. 128:2252-65 (2018).

The antibody has also been sold through many OEM partners, and peer-reviewed publications making use of it can be found by searching Google Scholar for "5C10 AND GFAP AND antibody" or, if you are viewing this online, simply by selecting this link.

Abbreviation Key:

mAb—Monoclonal Antibody pAb—Polyclonal Antibody WB—Western Blot IF—Immunofluorescence ICC—Immunocytochemistry IHC—Immunohistochemistry E—ELISA Hu—Human Mo—Monkey Do—Dog Rt—Rat Ms—Mouse Co—Cow Pi—Pig Ho—Horse Ch—Chicken Dr—D. rerio Dm—D. melanogaster Sm—S. mutans Ce—C. elegans Sc—S. cerevisiae Sa—S. aureus Ec—E. coli.