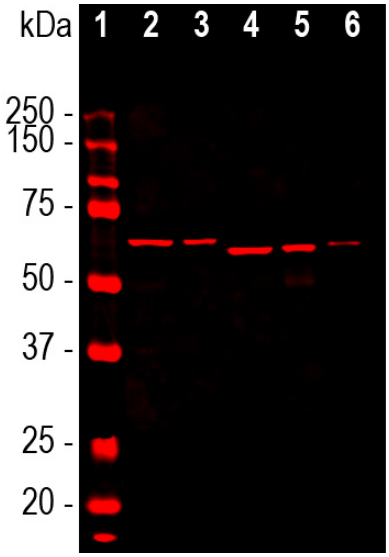
α-Internexin Mouse Monoclonal Antibody

MCA-2E3

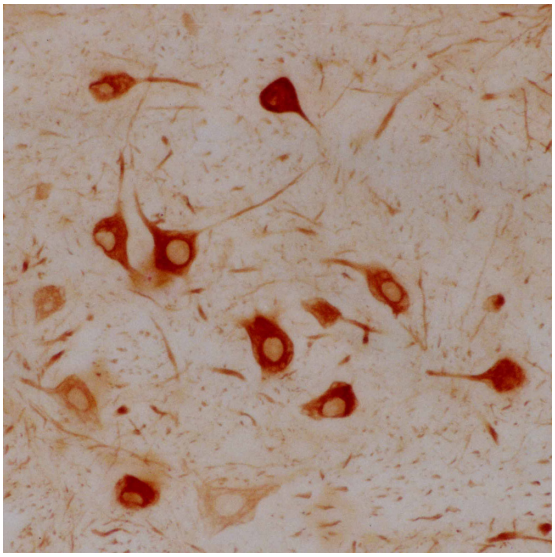
Ordering Information
Web ***www.encorbio.com***
Email ***admin@encorbio.com***
Phone ***352-372-7022***
Fax ***352-372-7066***

HGNC Name: *INA*
UniProt: *Q16352*
RRID: *AB_2572335*
Immunogen: *Full length recombinant rat alpha-internexin expressed in and purified from E. coli*
Format: *Purified at 1mg/mL in PBS, 50% glycerol, 5mM NaN3*
Storage: *Store at 4°C for short term, for longer term store at -20°C*
Recommended dilutions:
WB: 1:10,000. IF/ICC and IHC: 1:1,000-5,000.

Applications	Host	Isotype	Molecular Wt.	Species Cross-Reactivity
WB, IF/ICC, IHC	Mouse	IgG1	64-66kDa by SDS-PAGE	Hu, Rt, Ms, Co



Western blot analysis of different tissue lysates using mouse mAb to α-internexin, MCA-2E3, dilution 1:10,000 in red: [1] protein standard, [2] rat brain, [3] rat spinal cord, [4] mouse brain, [5] mouse spinal cord, and [6] cow spinal cord lysate. The MCA-2E3 antibody reveals the α-internexin protein with an apparent molecular weight of 64-66kDa, with some variability across species.



Immunohistochemistry of a section of rat facial nucleus 7 days following axotomy. These neurons are capable of regenerating their axons and also, concomitant with regeneration, strongly upregulate α-internexin in their perikarya. Other central neurons which are not able to regenerate their axons do not upregulate this protein after axotomy and untreated facial neurons normally show only very low levels of α-internexin. Both findings suggest that α-internexin has a role in axonal regeneration.

Background:

α-internexin is a Class IV intermediate filament protein originally discovered by two different groups of researchers as it copurifies with NF-L, NF-M and NF-H, the better known major neurofilament "triplet" subunits (1,2). It is expressed only in neurons and in large amounts early in neuronal development, but is down-regulated in many neurons as development proceeds. Some neurons express α-internexin in the absence of NF-L, NF-M and NF-H, though most mature neurons express all four proteins. This α-internexin antibody has been shown, in peer reviewed publications, to reveal the upregulation of α-internexin in facial neurons following experimental axotomy followed by down regulation on axonal regeneration (3). It is also the standard reagent used to identify and classify patients with neurofilament inclusion body disease, a specific form of frontotemporal lobar dementia (4-6). Finally it has been used to confirm the presence of circulating antibodies to α-internexin in the blood of certain patients with endocrine autoimmunity (7).

This antibody was made against full length recombinant rat α-internexin and the antibody binds to the α-internexin protein from different mammals, including human, rat, and mouse. It is clean and specific on western blots, ICC and IHC of rodent and human material. We also supply an alternate mouse monoclonal antibody, MCA-1D2, a rabbit polyclonal antibody, RPCA-a-Int, and a chicken polyclonal antibody, CPCA-a-Int to this protein.

References:

1. Pachter J and Liem RKH. Alpha-Internexin, a 66-kD intermediate filament-binding protein from mammalian central nervous tissues. J Cell Biol 101:1316-22 (1985).
2. Chiu FC, et al. Characterization of a novel 66 kd subunit of mammalian neurofilaments. Neuron 2:1435-45 (1989).
3. McGraw T. et al. Axonally transported peripheral signals regulate alpha-internexin expression in regenerating motoneurons. J Neurosci. 22:4955-63 (2002).
4. Evans J. et al. Characterization of mitotic neurons derived from adult rat hypothalamus and brain stem. J. Neurophysiol. 87:1076-85 (2002).
5. Cairns NJ. et al. Alpha-internexin is present in the pathological inclusions of neuronal intermediate filament inclusion disease. Am . J. Pathol. 164:2153-61 (2004).
6. Uchikado H1, Shaw G, Wang DS, Dickson DW. Screening for neurofilament inclusion disease using alpha-internexin immunohistochemistry. Neurology 64:1658-9 (2005).
7. Rajasalu T, et al. Demonstration of natural autoantibodies against the neurofilament protein alpha-internexin in sera of patients with endocrine autoimmunity and healthy individuals. Immunol. Lett. 94:153-60 (2004).

The antibody has also been sold through many OEM partners, and almost 70 peer-reviewed publications making use of it can be found by searching Google Scholar for "2E3 AND internexin" or, if you are reading 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.