α-Internexin Rabbit Polyclonal Antibody

RPCA-a-Int

Ordering Information
Web *www.encorbio.com*
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Phone *352-372-7022*
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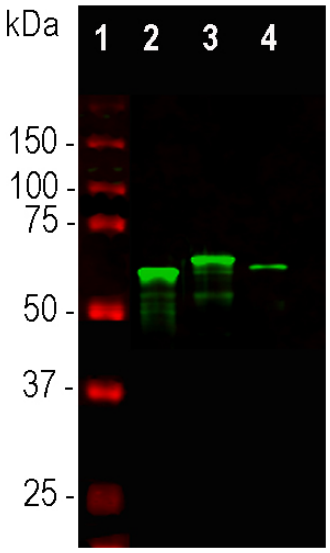
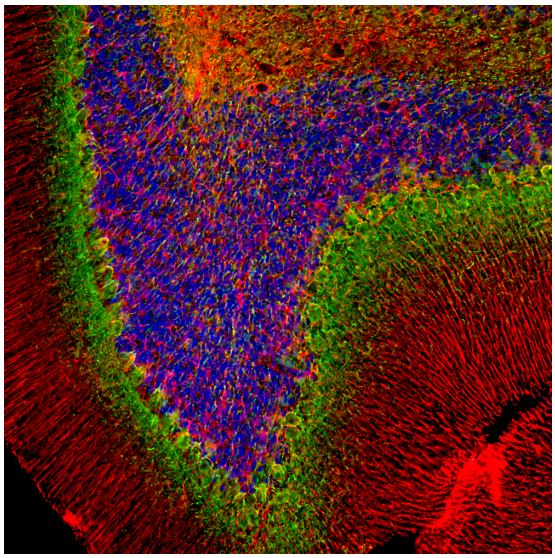
HGNC Name: *INA*
UniProt: *Q16352*
RRID: *AB_2572336*
Immunogen: *Full length recombinant rat α-internexin expressed in and purified from E. coli.*
Format: *Antibody is supplied as an aliquot of serum plus 5mM NaN_3*
Storage: *Store at 4°C for short term, for longer term at -20°C. Avoid freeze / thaw cycles.*
Recommended dilutions:
Western blot: 1:10,000-1:20,000. ICC/IF and IHC: 1:500-1:1,000.

Applications	Host	Isotype	Molecular Wt.	Species Cross-Reactivity
Western blot, ICC/IF, IHC	Rabbit		64-66 kDa by SDS-PAGE	Hu, Rt, Ms, Bo, Po, Ho



Western blot analysis of whole tissue lysates using rabbit pAb to α-internexin, RPCA-a-Int, dilution 1:10,000 in green: [1] protein standard (red), [2] mouse spinal cord, [3] rat spinal cord, [4] bovine spinal cord. Major bands in the 64-66kDa range corresponds to α-internexin. The α-internexin protein from different species is known to vary slightly in SDS-PAGE molecular weight.



Immunofluorescent analysis of rat cerebellum section stained with rabbit pAb to α-internexin, RPCA-a-Int, dilution 1:2,000, in green, and chicken pAb to GFAP, CPCA-GFAP, dilution 1:5,000, in red. Blue is DAPI staining of nuclear DNA. Following transcardial perfusion with 4% paraformaldehyde, brain was post fixed for 24 hours, cut to 45μM, and free-floating sections were stained with above antibodies. The α-internexin antibody selectively stains axons and dendrites of neuronal cells, in particular Purkinje cells and parallel fibers the axons of granule cells. The GFAP antibody labels network of glial cells, such as astrocytes in the granule cell layer and white matter and Bergmann glia in the molecular layer.

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 then 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. An 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). The MCA-2E3 mouse monoclonal antibody to α-internexin, also made by EnCor is the standard reagent used to identify and classify patients with neurofilament inclusion body disease, a specific form of frontotemporal lobar dementia (4-6).

This antibody was made against full length recombinant rat α-internexin fused to the C-terminus of bacterial TrpE expressed in and purified from *E. coli*. 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. We also supply an mouse monoclonal antibodies and a chicken polyclonal antibody to this protein, MCA-2E3, MCA-1D2 and CPCA-a-Int.

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).

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.