



Alpha-Internexin/NF66 (2E3)

CATALOG NUMBER: MUB0101P

CLONE: 2E3

SPECIES / ISOTYPE: mouse IgG1

PRODUCT FORM: purified monoclonal antibody

BACKGROUND

Alpha-internexin is a Class IV intermediate filament originally discovered as it copurifies with other neurofilament subunits (1). On SDS-PAGE gels it runs with an apparent molecular weight of 64 to 66 kDa, with some species variability, although the real molecular weight is about 55kDa; as with the other neurofilament subunits the presence of highly negatively charged sequences results in reduction of SDS-PAGE mobility. α -internexin is related to but distinct from the better known neurofilament triplet proteins, NF-L, NF-M and NF-H, having similar protein sequence motifs and a similar intron organization. It is expressed only in neurons and in large amounts early in neuronal development, but is down-regulated in many neurons as development proceeds. Many classes of mature neurons contain α -internexin in addition to NF-L, NF-M and NF-H. In some mature neurons α -internexin is the only neurofilament subunit expressed. Antibodies to α -internexin are therefore unique probes to study and classify neuronal types and follow their processes in sections and in tissue culture. In addition the very early developmental expression of α -internexin means its presence is an early and convenient diagnostic feature of neuronal progenitor cells and other cell committed to the neuronal lineage. In addition recent studies show a marked up-regulation of α -internexin during neuronal regeneration (2). The use of antibodies to this protein in the study of brain tumors has not been examined to date, but is likely to be of interest. Recently Trojanowski, Lee and coworkers used this antibody to show that α -internexin is an abundant component of the inclusions of neurofilament inclusion body disease, a serious human neurodegenerative disorder. The antibody was also used to confirm the presence of circulating auto-antibodies to α -internexin in the sera of some patients with endocrine autoimmunity, as well as in some normal individuals (Rajasalu et al., 2004).

SOURCE

2E3 is a mouse monoclonal IgG1 antibody that was raised against purified recombinant rat α -internexin expressed in and purified from *E. coli*. 2E3 reacts with human α -internexin and with this protein in all mammalian species tested to date.

PRODUCT

Each vial contains 100 μ l 1 mg/ml purified monoclonal antibody in PBS containing 0.09% sodium azide

SPECIFICITY

Can be used on formalin-fixed cells in tissue culture, cryostat sections, and Western blotting. The epitope recognized by 2E3 is in the C-terminal non-helical extension of the protein and is unusually resistant to aldehyde fixation, so that this antibody is ideal for studies of paraffin embedded formalin fixed histological sections. For immunofluorescence use dilutions of 1:500, for immunohistochemistry with ABC or other enzymatic amplification procedures use 1:5000. For western blots use 1:10.000 dilutions.

SPECIES REACTIVITY

Mouse.

STORAGE

Maintain at +2-8°C for 3 months or at -20°C for longer periods. Stable for 1 year. Avoid repeated freeze-thaw cycles.

REFERENCES

1. Pachter, J and Liem, R.K.H. Alpha-Internexin, a 66-kD intermediate filament-binding protein from mammalian central nervous tissues. *J Cell Biol* 101:1316-22 (1985).
2. McGraw et al. Axonally transported peripheral signals regulate alpha-internexin expression in regenerating motoneurons. *J Neurosci* 22:4955-63 (2002).
3. Evans J. et al. Characterization of mitotic neurons derived from adult rat hypothalamus and brain stem. *J. Neurophysiol.* 87:1076-85 (2002).

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WARNING and CAUTION

This product is intended FOR RESEARCH USE ONLY, and FOR TESTS IN VITRO, not for use in diagnostic or therapeutic procedures involving humans or animals.

This product contains sodium azide. To prevent formation of toxic vapors, do not mix with strong acidic solutions. To prevent formation of potentially explosive metallic azides in metal plumbing, always wash into drain with copious quantities of water.