



## **alpha-Internexin. Mouse Monoclonal Antibody 2E3** **All mammalian species**

NF66

### **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.  $\alpha$ -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  $\alpha$ -internexin in addition to NF-L, NF-M and NF-H. In some mature neurons  $\alpha$ -internexin is the only neurofilament subunit expressed. Antibodies to  $\alpha$ -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  $\alpha$ -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  $\alpha$ -internexin during neuronal regeneration (2).

### **ORDERING INFORMATION**

**CATALOG NUMBER**  
X1723M

**SIZE**  
100  $\mu$ g

**FORM**  
Unconjugated

**HOST/CLONE**  
Mouse Clone 2E3

**FORMULATION**  
Provided as solution in phosphate buffered saline with 0.08% sodium azide

**CONCENTRATION**  
1 mg/ml

**ISOTYPE**  
IgG1

**APPLICATIONS**  
Western Blot, Immunohistochemistry, Immunocytochemistry

### **IMMUNOGEN**

Hybridoma produced by the fusion of splenocytes from mice immunized with recombinant rat  $\alpha$ -internexin and mouse myeloma cells.

### **SPECIES REACTIVITY**

All mammalian species

### **COMMENTS**

Antibody can be used for Western blotting (1:10,000), immunofluorescence and immunohistochemistry on frozen and paraffin-embedded formalin-fixed sections (1:5000). Optimal concentration should be evaluated by serial dilutions.

### **STORAGE**

Product should be stored at -20°C. Aliquot to avoid freeze/thaw cycles

### **STABILITY**

Products are stable for one year from purchase when stored properly

**For research use only. Not for use in human diagnostics or therapeutics.**

**POSITIVE CONTROL/TISSUE EXPRESSION**

Human alpha-internexin

**SHIP CONDITIONS**

Ship at ambient temperature, freeze upon arrival

**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. 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).
4. 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.* 2004. 94, 153–160.
5. Cairns, N.J., et al "Clinical and neuropathologic variation in neuronal intermediate filament inclusion disease." *Neurology*, 2004, 63, 1376–1384.

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