Neurofilaments, Phosphorylated (SMI 31)
Monoclonal Antibody, Purified
Catalog Number: SMI-31P
Available Size: 0.1 mL

**Description:**
Purified form of monoclonal antibody to neurofilaments, phosphorylated epitope, Clone SMI 31

**Also Known As:**
neurofilament heavy polypeptide; NF-H; 200 kDa neurofilament protein; neurofilament triplet H protein

**Intended Use:**
**Research Use Only (RUO)**
This product is sold for laboratory research use only, not for human or in-vivo use.

**Form:**
Purified Antibody (in PBS + Thimerosal)

**Clone:**
SMI 31

**Host:**
Mouse

**IsoType:**
IgG1

**Species Reactivity:**
Mammalian, Chicken, Xenopus

**[Ab]:**
1 mg/mL

**Specificity:**
SMI 31 reacts with a phosphorylated epitope in extensively phosphorylated neurofilament H and, to a lesser extent, with neurofilament M in most mammalian species, as well as in chicken and frog (Xenopus). Immunocytochemically, SMI 31 reacts broadly with thick and thin axons and some dendrites such as basket cell dendrites, but not Purkinje cell dendrites. Nerve cell bodies are generally unreactive. Other cells and tissues are unreactive except for peripheral axons. Phosphatase treatment of tissue sections or Western blots abolishes reaction with SMI 31. Staining is unaffected by trypsin. In pathological conditions, reaction with SMI 31 may be found also in neuronal cell bodies. Aberrant phosphorylation of neurofilament H in cell bodies can be demonstrated in neuronal cell cultures with SMI 31 by agents that induce stress- activated protein kinase. In its reaction with paired helical filaments in hereditary inclusion body myopathy, SMI 31 colocalizes with nitric oxide synthase, suggesting that oxidative stress may play a role in the pathogenic cascade of such degenerative diseases. SMI 31 co-immunoprecipitates neurofilament-associated kinase (NAK 115) via reaction of the antibody with the tail domain of neurofilament H.

**Uses:**
This antibody is effective in immunoblotting (WB), immunohistochemistry (IHC), immunocytochemistry and ELISA.

**Suggested Working Dilution:**
The optimal working dilution should be determined for each specific assay condition.
- WB: 1:1,000
- IHC: 1:1,000

**Tissue Sections:**
Formalin-fixed, paraffin-embedded tissues & frozen sections

**Pretreatment:**
For optimal staining, the sections should be pretreated with an antigen unmasking solution such as Retrieve-All 3 pH4.8 (SIG-31900).

**Incubation:**
24 hours at 2-8°C using Biotin based detection systems such as USA Ultra Streptavidin Detection (SIG-32250).
- ELISA: 1:1,000

The extent of permissible dilution of SMI 31 beyond those recommended for general application depends upon nature and concentration of...
the antigen examined, species of the antigen, method of fixation and kind of section examined.

**Notes:**
Positive Control: human cerebellum tissue

**Storage:**
Store at -20°C. Upon initial thawing, apportion into working aliquots and store at -20°C. Avoid repeated freeze-thaw cycles to prevent denaturing the antibody. For long-term storage, keep the antibody at -80°C.

**References:**


**Warranty/Conditions:**
Covance products may not be resold or modified for resale without prior written approval. All sales are subject to Covance Antibody Products Terms and Conditions of Sale.

**Datasheet Revision Date:**
3/20/2013

**Related Products:**
- Neurofilament H Non-Phosphorylated (SMI 32) Monoclonal Antibody Catalog Number SMI-32R
- Ultra Streptavidin (USA) Horseradish peroxidase (HRP) 50 Test, Multi-Species, DAB Detection Kit Catalog Number SIG-32250
- Ultra Streptavidin (USA) Horseradish peroxidase (HRP) 50 Test, Multi-Species, AEC Detection Kit Catalog Number SIG-32248
- Neurofilaments, Phosphorylated (SMI 31) Monoclonal Antibody Catalog Number SMI-31R
- Neurofilament H Phosphorylated (SMI 310) Monoclonal Antibody Catalog Number SMI-310R
- Pan-Axonal Neurofilament Marker (SMI 312) Monoclonal Antibody Catalog Number SMI-312R