

## Overview

### Useful For

Differentiating neurons (NF+) from glia (NF-)

### Reflex Tests

Test Id	Reporting Name	Available Separately	Always Performed
IHTOI	IHC Initial, Tech Only	No	No
IHTOA	IHC Additional, Tech Only	No	No

### Testing Algorithm

[For the initial technical component only immunohistochemical \(IHC\) stain performed, the appropriate bill-only test ID will be reflexed and charged \(IHTOI\). For each additional technical component only IHC stain performed, an additional bill-only test ID will be reflexed and charged \(IHTOA\).](#)

### Method Name

Immunohistochemistry

### NY State Available

Yes

## Specimen

### Specimen Type

TECHONLY

### Ordering Guidance

This test includes only technical performance of the stain (no pathologist interpretation is performed). If diagnostic consultation by a pathologist is required order PATHC / Pathology Consultation.

### Shipping Instructions

Attach the green pathology address label and the pink Immunostain Technical Only label included in the kit to the outside of the transport container.

### Specimen Required

**Supplies:** Immunostain Technical Only Envelope (T693)

**Specimen Type:** Tissue

**Preferred:** 2 Unstained positively charged glass slide (25- x 75- x 1-mm) per test ordered; sections 4-microns thick.

**Acceptable:** Formalin-fixed, paraffin-embedded (FFPE) tissue block

## Digital Image Access

[Mayo Clinic is preparing to migrate to a new slide scanning solution and will need to temporarily suspend digital imaging for tech-only IHC/ISH orders received after June 17. We will send a follow-up notification by September 1st indicating when digital imaging resumes. We appreciate your patience as we improve our digital imaging solution.](#)

## Forms

If not ordering electronically, complete, print, and send a [Immunohistochemical \(IHC\)/In Situ Hybridization \(ISH\) Stains Request](#) (T763) with the specimen.

## Reject Due To

Hemolysis	NA
Lipemia	NA
Icterus	NA
Other	Wet/frozen tissue Cytology smears Nonformalin fixed tissue Nonparaffin embedded tissue Noncharged slides ProbeOn slides

## Specimen Stability Information

Specimen Type	Temperature	Time	Special Container
TECHONLY	Ambient (preferred)		
	Refrigerated		

## Clinical & Interpretive

### Clinical Information

Neurofilament antibody clone SMI 31 reacts with a phosphorylated epitope on neurofilament H and, to a lesser degree, neurofilament M. Both of these proteins contain multiple tandemly repeated serine phosphorylation sites. Clone SMI 31 reacts with thick and thin axons and specific dendrites such as basket cell dendrites. SMI 31 may also stain neuronal cell bodies in pathological conditions.

### Interpretation

This test includes only technical performance of the stain (no pathologist interpretation is performed). Mayo Clinic cannot provide an interpretation of tech only stains outside the context of a pathology consultation. If an interpretation is needed, refer to PATHC / Pathology Consultation for a full diagnostic evaluation or second opinion of the case. All material associated with the case is required. Additional specific stains may be requested as part of the pathology consultation, and will be performed as necessary at the discretion of the Mayo pathologist.

The positive and negative controls are verified as showing appropriate immunoreactivity and documentation is retained at Mayo Clinic Rochester. If a control tissue is not included on the slide, a scanned image of the relevant quality control tissue is available upon request. Contact 855-516-8404.

Interpretation of this test should be performed in the context of the patient's clinical history and other diagnostic tests by a qualified pathologist.

**Cautions**

Age of a cut paraffin section can affect immunoreactivity. Stability thresholds vary widely among published literature and are antigen-dependent. Best practice is for paraffin sections to be cut within 6 weeks.

**Clinical Reference**

1. Rudrabhatla P, Jaffe H, Pant HC: Direct evidence of phosphorylated neuronal intermediate filament proteins in neurofibrillary tangles (NFTs): phosphoproteomics of Alzheimer's NFTs. *FASEB J* 2011;25(11):3896-3905
2. Raina AK, Takeda A, Nunomura A, et al: Genetic evidence for oxidative stress in Alzheimer's disease. *NeuroReport* 1999;10:1355-1357
3. Yang CC, Alvarez RB, Engel WK, et al: Nitric oxide-induced oxidative stress in autosomal recessive and dominant inclusion-body myopathies. *Brain* 1998;121:1089-1097
4. Giasson BI, Mushynski WE: Aberrant stress-induced phosphorylation of perikaryal neurofilaments. *J Biol Chem* 1996;271(48):30404-30409

**Performance****Method Description**

Immunohistochemistry on sections of paraffin-embedded tissue.(Unpublished Mayo method)

**PDF Report**

No

**Day(s) Performed**

Monday through Friday

**Report Available**

1 to 3 days

**Specimen Retention Time**

Until staining is complete.

**Performing Laboratory Location**

Rochester

**Fees & Codes****Fees**

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- Authorized users can sign in to [Test Prices](#) for detailed fee information.
  - Clients without access to Test Prices can contact [Customer Service](#) 24 hours a day, seven days a week.
  - Prospective clients should contact their Regional Manager. For assistance, contact [Customer Service](#).

**Test Classification**

This test has been cleared, approved, or is exempt by the US Food and Drug Administration and is used per manufacturer's instructions. Performance characteristics were verified by Mayo Clinic in a manner consistent with CLIA requirements.

**CPT Code Information**

88342-TC, primary

88341-TC, if additional IHC

**LOINC® Information**

Test ID	Test Order Name	Order LOINC® Value
NFSMI	NF (SMI31) IHC, Tech Only	Order only;no result

Result ID	Test Result Name	Result LOINC® Value
71358	NF (SMI31) IHC, Tech Only	Bill only; no result