Test Definition: FUSI

FUS IHC, Tech Only

Overview

Useful For

Identification of frontotemporal lobar dementia (FTLD)

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

Advisory Information

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

Container/Tube: Immunostain Technical Only Envelope (T693)

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

1. Information on accessing digital images of immunohistochemical (IHC) stains and the manual requisition form can be accessed through this website: www.mayocliniclabs.com/test-info/ihc/index.html

2. Clients ordering stains using a manual requisition form will not have access to digital images.

3. Clients wishing to access digital images must place the order for IHC stains electronically. Information regarding digital imaging can be accessed through this website: www.mayocliniclabs.com/test-info/ihc/faq.html

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

Wet/frozen tissue Cytology smears Nonformalin fixed tissue Nonparaffin embedded tissue Noncharged slides ProbeOn slides	Reject

Specimen Stability Information

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

Clinical and Interpretive

Clinical Information

FUS (also known as "translated in liposarcoma" TLS) protein is a multifunctional DNA- and RNA-binding protein. Studies have shown the cause of familial amyotrophic lateral sclerosis (ALS) to be a mutation in the gene encoding the FUS protein. FUS has been linked to other neurodegenerative diseases including frontotemporal lobar dementia (FTLD), and neuronal intermediate filament inclusion disease (NIFID).

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 fresh.

Clinical Reference

1. Kwiatkowski TJ Jr, Bosco DA, LeClerc AL, et al: Mutations in the *FUS/TLS* Gene on Chromosome 16 Cause Familial Amyotrophic Lateral Sclerosis. Science, 2009;323:1205-1208

2. Loy CT, McCusker E, Kril JJ, et al: Very Early-Onset Frontotemporal Dementia with no Family History Predicts Underlying Fused In Sarcoma Pathology. Brain 2010;133:1-2

3. Munoz DG, Neumann M, Kusaka H, et al: FUS Pathology in Basophilic Inclusion Body Disease. Acta Neuropathol 2009;118:617-627

4. Neumann M, Bentmann E, Dormann D, et al: FET Proteins TAF15 and EWS are Selective Markers that Distinguish FTLD with FUS Pathology from Amyotrophic Lateral Sclerosis with FUS Mutations. Brain 2011;134:2595-2609

5. Neumann M, Rademakers R, Roeber S, et al: A New Subtype of Frontotemporal Lobar Degeneration with FUS Pathology. Brain 2009;132:2922-2931

6. Neumann M, Roeber S, Kretzchmar HA, et al: Abundant FUS-Immunoreactive Pathology in Neuronal Intermediate Filament Inclusion Disease. Acta Neuropathol 2009;118:605-616

7. Urwin H, Josephs KA, Rohrer JD, et al: FUS Pathology Defines the Majority of Tau- and TDP-43- Negative Frontotemporal Lobar Degeneration. Acta Neuropathol 2010;120:33-41

Performance

Method Description

Immunohistochemistry on sections of paraffin-embedded tissue.(Cartun RW, Taylor CR, Dabbs DJ: Techniques of immunohistochemistry: Principles, pitfalls, and standardization. In: Dabbs DJ, ed. Diagnostic Immunohistochemistry. 5th ed. Elsevier; 2019:1-46)

PDF Report

No

Day(s) and Time(s) Test Performed

Monday through Friday

Analytic Time

1 day

Maximum Laboratory Time

3 days

Specimen Retention Time

Until staining is complete.

Performing Laboratory Location

Rochester

Fees and Codes

Fees

- 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 U.S. 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
FUSI	FUS IHC, Tech Only	Order only;no result

Result ID	Test Result Name	Result LOINC Value
70747	FUS IHC, Tech Only	Bill only; no result