MAYO CLINIC LABORATORIES

Test Definition: MT

Metallothionein Immunostain, Technical Component Only

Overview

Useful For

Supporting the diagnosis of Wilson disease

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 (IHC)

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
Container/Tube: Immunostain Technical Only Envelope
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: https://news.mayocliniclabs.com/ihc-stains/
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: https://news.mayocliniclabs.com/ihc-stains/#FAQ

Specimen Minimum Volume

See Specimen Required

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 & Interpretive

Clinical Information

This test is intended to identify the presence of metallothionein (MT). MT is useful to support a diagnosis of Wilson disease (WD). MT plays a role in binding the accumulated copper in WD disorder. MT can detect even early-stage cases of WD before the development of cirrhosis. The MT assay has been shown to have higher sensitivity and specificity compared to the use of the Leipzig criteria and rhodanine. MT expression by IHC is a more cost effective and practical approach compared to quantitative liver copper assays.

Interpretation

This test does not include pathologist interpretation only technical performance of the stain. If interpretation is required order PATHC / Pathology Consultation for a full diagnostic evaluation or second opinion of the case.

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. Rowan D, Mangalaparthi KK, Singh S, et al. Metallothionein immunohistochemistry has high sensitivity and specificity for detection of Wilson disease. Mod Pathol. 2022;35(7):946-955
2. Poujois A, Woimant F. Wilson's disease: A 2017 update. Clin Res Hepatol Gastroenterol. 2018;42(6):512-520
3. Mulder TP, Janssens AR, Verspaget HW, et al. Metallothionein concentration in the liver of patients with wilson's disease, primary biliary cirrhosis, and liver metastasis of colorectal cancer. J Hepatol. 1992;16(3):346-350
4. Petering DH, Fowler BA. Roles of metallothionein and related proteins in metal metabolism and toxicity: problems and perspectives. Environ Health Perspect. 1986;65:217-224

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

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Fees & 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 account representative. 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
MT	Metallothionein IHC, Tech Only	No LOINC Needed

Result ID	Test Result Name	Result LOINC® Value
619973	Metallothionein IHC, Tech Only	No LOINC Needed