MAYO CLINIC LABORATORIES

Test Definition: UBIQ

Ubiquitin (UBIQ) Immunostain, Technical Component Only

Overview

Useful For
Classification of neurodegenerative diseases

Reflex Tests

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

Technical component only stains **should not** be ordered with PATHC / Pathology Consultation. If ordered with PATHC, the technical component stains **will be canceled**. Any immunohistochemistry (IHC)/in situ hybridization (ISH) stain performed as a part of the PATHC will be performed at the reviewing pathologist's discretion at an additional charge.

Shipping Instructions
Attach the green "Attention Pathology" address label (T498) and the pink Immunostain Technical Only label included in the kit to the outside of the transport container.

Specimen Required
Specimen Type: Tissue

Supplies: Immunostain Technical Only Envelope (T693)
Container/Tube: Immunostain Technical Only Envelope
Preferred:
-Formalin-fixed, paraffin-embedded tissue block
OR
-2 Unstained, positively charged glass slides (25- x 75- x 1-mm) per test ordered; sections 4-microns thick
Acceptable: None

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/pathology/digital-imaging/
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/pathology/digital-imaging/#section3

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 Snowcoat slides	Reject

Specimen Stability Information

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

Clinical & Interpretive

Clinical Information

Ubiquitin is a polypeptide of approximately 8.5 kDa found in filamentous inclusions and cytosome-related organelles in human idiopathic neurodegenerative diseases, including Alzheimer disease, Pick disease, Lewy body dementia, and Parkinson disease. Ubiquitin is also expressed in Rosenthal fibers in astrocytomas. Ubiquitin protein complexes have also been found in primary lysosome-related granules in mature neutrophils. Ubiquitin labels the periphery of senile plaques and of neurofibrillary tangles in Alzheimer disease, Lewy bodies in Parkinson disease, and Mallory bodies in alcoholic liver disease.

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.

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.

The charge of glass slides can be affected by environmental factors and subsequently may alter slide staining. Sending unsuitable glass slides can result in inconsistent staining due to poor slide surface chemistry.

Best practices for storage of positively charged slides:
-Minimize time slides are stored after being unpackaged
-Limit exposure to high humidity and heat
-Minimize exposure to plastics

Clinical Reference

1. Chu CT, Caruso JL, Cummings TJ, Ervin J, Rosenberg C, Hulette CM. Ubiquitin immunochemistry as a diagnostic aid for community pathologists evaluating patients who have dementia. Mod Pathol. 2000;13(4):420-426
2. Josephs KA, Holton JL, Rossor MN, et al. Frontotemporal lobar degeneration and ubiquitin immunohistochemistry. Neuropathol Appl Neurobiol. 2004;30(4):369-373
3. Katsuse O, Dickson DW. Ubiquitin immunohistochemistry of frontotemporal lobar degeneration differentiates cases with and without motor neuron disease. Alzheimer Dis Assoc Disord. 2005;19 Suppl 1:S37-S43
4. Lennox G, Lowe J, Landon M, Byrne EJ, Mayer RJ, Godwin-Austen RB. Diffuse Lewy body disease: correlative neuropathology using anti-ubiquitin immunocytochemistry. J Neurol Neurosurg Psychiatry. 1989;52(11):1236-1247
5. Mackenzie IR, Feldman HH. Ubiquitin immunohistochemistry suggests classic motor neuron disease, motor neuron disease with dementia, and frontotemporal dementia of the motor neuron disease type represent a clinicopathologic spectrum. J Neuropathol Exp Neurol. 2005;64(8):730-739
6. Magaki S, Hojat SA, Wei B, So A, Yong WH. An introduction to the performance of immunohistochemistry. Methods Mol Biol. 2019;1897:289-298. doi:10.1007/978-1-4939-8935-5_25

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
Mayo Clinic Laboratories - Rochester Main Campus

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
UBIQ	Ubiquitin IHC, Tech Only	Order only;no result

Result ID	Test Result Name	Result LOINC® Value

70890	Ubiquitin IHC, Tech Only	Bill only; no result