

**Overview****Useful For**

Aids in the differentiation of sarcomatoid carcinoma from sarcomatoid mesothelioma

**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 "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 an [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
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### Specimen Stability Information

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

### Clinical & Interpretive

#### Clinical Information

Mucin 4 (MUC4) is a large membrane-anchored glycoprotein that belongs to the mucin family. Mucins play important

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roles in the protection of epithelial cells and have been implicated in epithelial renewal and differentiation. MUC4 is expressed in the cytoplasm and membrane of respiratory, gastrointestinal, cervical, and prostatic epithelial cells. Overexpression of MUC4 has been observed in many carcinomas. It has been shown to be useful for the distinction between sarcomatoid carcinoma (often expressed) versus sarcomatoid mesothelioma (usually negative).

**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. Tamura Y, Higashi M, Kitamoto S, et al. MUC4 and MUC1 expression in adenocarcinoma of the stomach correlates with vessel invasion and lymph node metastasis: an immunohistochemical study of early gastric cancer. *PLoS One*. 2012;7(11):e49251
2. Kwon K, Ro J, Singhal N, et al. MUC4 expression in non-small cell lung carcinomas: relationship to tumor histology and patient survival. *Arch Pathol Lab Med*. 2007;131(4):593-598
3. Majhi PD, Lakshmanan I, Ponnusamy M, et al. Pathobiological implications of MUC4 in non-small-cell lung cancer. *J Thorac Oncol*. 2013;8(4):398-407
4. Cowan M, Thompson L, Leon M, et al. Low-Grade Fibromyxoid Sarcoma of the Head and Neck: A Clinicopathologic Series and Review of the Literature. *Head Neck Pathol*. 2016;10(2):161-166
5. 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
MUCN4	Mucin 4 IHC, Tech Only	Order only;no result

Result ID	Test Result Name	Result LOINC® Value
601741	Mucin 4 IHC, Tech Only	Bill only; no result