

Test Definition: EMAI

Epithelial Membrane Antigen (EMA)
Immunostain, Technical Component Only

Overview

Useful For

Recognizing epithelial derivation of poorly differentiated malignant tumors

Subtyping intraductal papillary mucinous neoplasms when used in conjunction with mucin (MUC) 2, MUC5AC and MUC6

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)

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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/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>

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 |
|---|--------|

Specimen Stability Information

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

Clinical & Interpretive

Clinical Information

Epithelial membrane antigen (EMA), also known as mucin 1, is expressed by epithelial cells of all types, mesothelial cells, perineural cells, and a subset of plasma cells. EMA is expressed by meningiomas, synovial sarcoma, epithelioid sarcoma, a subset of peripheral nerve sheath tumors, the lymphocyte-predominant cells of lymphocyte-predominant Hodgkin lymphoma, and anaplastic large cell lymphoma. Diagnostically, EMA is useful in recognizing epithelial derivation of poorly differentiated malignant tumors and, in conjunction with a panel of mucin markers (MUC2, MUC5AC, and MUC6), may be used in subtyping intraductal papillary mucinous neoplasms.

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. Kwak HA, Liu X, Allende DS, Pai RK, Hart J, Xiao SY. Interobserver variability in intraductal papillary mucinous neoplasm subtypes and application of their mucin immunoprofiles. *Mod Pathol*. 2016;29(9):977-984. doi:10.1038/modpathol.2016.93
2. Ramezani M, Mohamadzaheer E, Khazaei S, et al. Comparison of EMA,CEA, CD10 and Bcl-2 Biomarkers by Immunohistochemistry in Squamous Cell Carcinoma and Basal Cell Carcinoma of the Skin. *Asian Pac J Cancer Prev*. 2016;17(3):1379-1383. doi:10.7314/apjcp.2016.17.3.1379
3. Song W, Flucke U, Suurmeijer AJH. Myoepithelial Tumors of Bone. *Surg Pathol Clin*. 2017;10(3):657-674. doi:10.1016/j.path.2017.04.010
4. 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 |
|---------|--------------------|----------------------|
| EMAI | EMA IHC, Tech Only | Order only;no result |

| Result ID | Test Result Name | Result LOINC® Value |
|-----------|--------------------|----------------------|
| 70737 | EMA IHC, Tech Only | Bill only; no result |