

Overview

Useful For

As part of a panel of immunostains where loss of staining can be used as a marker of various neoplasms

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

**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/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 a [Immunohistochemical \(IHC\)/In Situ Hybridization \(ISH\) Stains Request](#) (T763) with the specimen.

Specimen Minimum Volume

See Specimen Required

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

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**Clinical Information**

BRCA1-associated protein 1 (BAP1) is a deubiquitinating enzyme that is a member of the polycomb group proteins of transcriptional repressors and exhibits tumor suppressive activity. *BAP1* is located on chromosome 3p21 where loss of one copy of the gene and inactivating mutations are associated with the increased risk and development of various tumors, such as malignant mesotheliomas, uveal melanomas, clear cell renal cell carcinoma, and esophageal squamous carcinomas. In some of these cases, loss of nuclear staining for BAP1 has been reported.

**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**

Loss of BAP1 expression as determined by immunohistochemistry will not be able to differentiate between germline and somatic mutation.

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. Carbone M, Ferris LK, Baumann F, et al. BAP1 cancer syndrome: malignant mesothelioma, uveal and cutaneous melanoma, and MIB1. *J Transl Med* 2012;10:179
2. Koopmans AE, Verdijk RM, Brouwer RWW, et al. Clinical significance of immunohistochemistry for detection of BAP1 mutations in uveal melanoma. *Mod Pathol* 2014;27:1321-1330
3. Joseph RW, Kapur P, Serie DJ, et al. Clear cell renal cell carcinoma subtypes identified by BAP1 and PBRM1 Expression. *Jl of Urology* 2016;195:180-187
4. Klebe S, Driml J, Nasu M, et al. BAP1 hereditary cancer predisposition syndrome: a case report and review of literature. *Biomark Res* 2015;3:14
5. Mori T, Sumii M, Fujishima F, et al. Somatic alteration and depleted nuclear expression of BAP1 in human esophageal squamous cell carcinoma. *Cancer Sci* 2015;106:1118-1129
6. Churg A, Sheffield BS, Galateau-Salle F: New markers for separating benign from malignant mesothelials: Are we there yet? *Arch Pathol Lab Med* 2016;140(4):318-321
7. 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
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# Test Definition: BAP1

BAP1 Immunostain, Technical Component  
Only

BAP1	BAP1 IHC, Tech Only	Order only;no result
Result ID	Test Result Name	Result LOINC® Value
71488	BAP1 IHC, Tech Only	Bill only; no result