

## Overview

### Useful For

Aiding in the diagnosis of giant cell tumor of bone

### 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).

### Reflex Tests

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

### 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.](#)

Mayo Clinic Laboratories has multiple histone immunostains available. See table for ordering guidance.

Test ID	Published name	Indication	Mayo Clinic slide label
HG34W	Histone 3.3 G34W (H3F3A G34W) Immunostain, Technical Component Only	Giant cell tumor of bone (GCTB)	H3 G34W
HK27M	Histone H3 K27M Mutant (H3 K27M) Immunostain, Technical Component Only	K27M mutant midline gliomas	H3 K27M

HISME	Histone H3 Trimethyl K27 (H3 K27me[3]) Immunostain, Technical Component Only	MPNST and K27M mutant midline gliomas	H3 K27me3
HK36M	Histone H3 K36M Mutant (H3F3 K36M) Immunostain, Technical Component Only	Chondroblastom a	H3 K36M

## 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 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.

## Reject Due To

Wet/frozen tissue                      Reject  
Cytology smears  
Nonformalin fixed tissue  
Nonparaffin embedded tissue  
Noncharged slides  
ProbeOn slides

## Specimen Stability Information

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

## Clinical & Interpretive

### Clinical Information

*H3F3A* is a member of the histone H3 family and is located on chromosome 1. Histone H3 G34W is expressed in the nuclei of the mononuclear cell population of *H3F3A* altered giant cell tumor of bone (GCTB).

### 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. If a control tissue is not included on the slide, a scanned image of the relevant quality control tissue is available upon request, call 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. Cleven A, Hocker S, Briaire-de Bruijn I, Suzhai K, Cleton-Jansen AM, Bovee JVMG: Mutation analysis of H3F3A and H3F3B as a diagnostic tool for giant cell tumor of bone and chondroblastoma. *Am J Surg Pathol.* 2015;39(11):1576-1583
2. Fernanda A, Bersha F, Ye H, et al: H3F3A (Histone 3.3) G34W immunohistochemistry a reliable marker defining benign and malignant giant cell tumor of one. *Am J Surg Pathol.* 2017;41(8):1059-1068
3. Luke J, Von Baer A, Schreiber J, et al: H3F3A mutation in giant cell tumour of the bone is detected by immunohistochemistry using a monoclonal antibody against the G34W mutated site of histone H3/3 variant. *Histopathology.* 2017;71(4):125-133
4. Yamamoto H, Iwasaki T, Yuichi Y, et al: Diagnostic utility of histone H3.3 G34W, G34R, and G34V mutant-specific antibodies for giant cell tumors of bone. *Hum Pathol.* 2018;73(3):41-50

**Performance****Method Description**

Immunohistochemistry on sections of paraffin-embedded tissue.(Unpublished Mayo method)

**PDF Report**

No

**Specimen Retention Time**

Until staining is complete

**Performing Laboratory Location**

Rochester

**Fees & Codes****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
HG34W	Histone H3 G34W IHC, Tech Only	Order only;no result

  

Result ID	Reporting Name	LOINC®
604698	Histone H3 G34W IHC, Tech Only	Bill only; no result