

Overview

Useful For

Identification of anaplastic lymphoma kinase overexpression

Diagnosis of inflammatory myofibroblastic tumor and anaplastic large cell lymphoma

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

**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 immunohistochemical (IHC) stains and the manual requisition form can be accessed through this website: [www.mayocliniclabs.com/test-info/ihc/index.html](http://www.mayocliniclabs.com/test-info/ihc/index.html)
- 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: [www.mayocliniclabs.com/test-info/ihc/faq.html](http://www.mayocliniclabs.com/test-info/ihc/faq.html).

Specimen Minimum Volume

See Specimen Required

Reject Due To

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

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

Clinical & Interpretive

Clinical Information

A subset of anaplastic large-cell lymphomas show overexpression of anaplastic lymphoma kinase (ALK-1) protein, resulting from a translocation involving the *ALK1* gene. The abnormal ALK-1 expression can be in a nuclear or cytoplasmic distribution. Overexpression of ALK-1 protein can also be useful in the diagnosis of inflammatory myofibroblastic tumor and ALK-positive histiocytosis. In normal tissue, ALK-1 expression is primarily limited to neurons and ganglion cells. This clone, OTI1A4, is not validated for use in lung adenocarcinoma.

**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 and documentation is retained at Mayo Clinic Rochester. 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. Preobrazhenskaya E, Iyevleva A, Suleymanova A, et al. Gene rearrangements in consecutive series of pediatric inflammatory myofibroblastic tumors. *Pediatr Blood Cancer*. 2020;67(5):e28220
2. Mansour B, Bonati M, Michalove K, et al. Epithelioid fibrous histiocytoma: three diagnostically challenging cases with novel ALK gene fusions, unusual storiform growth pattern, and a prominent spindled morphology. *Virchows Archiv*. 2022;481(5):751-757
3. He J, Zhao X, Huang C, et al. Double amplifications of CDK4 and MDM2 in a gastric inflammatory myofibroblastic tumor mimicking cancer with local invasion of the spleen and diaphragm. *Cancer Biology & Therapy*. 2018;19:11:967-972
4. Kemps PG, Picarsic J, Durham BH, et al. ALK-positive histiocytosis: a new clinicopathologic spectrum highlighting neurologic involvement and responses to ALK inhibition. *Blood*. 2022;139(2):256-280

**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.

# Test Definition: ALKOT

Anaplastic Lymphoma Kinase (ALK [OTI1A4])  
Immunostain, Technical Component Only

Performing Laboratory Location  
Rochester

## 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 was developed and its performance characteristics determined by Mayo Clinic in a manner consistent with CLIA requirements. It has not been cleared or approved by the US Food and Drug Administration.

### CPT Code Information

88342-TC, primary  
88341-TC, if additional IHC

### LOINC® Information

Test ID	Test Order Name	Order LOINC® Value
ALKOT	ALK(OTI1A4) IHC, Tech Only	No LOINC Needed

Result ID	Test Result Name	Result LOINC® Value
620406	ALK(OTI1A4) IHC, Tech Only	No LOINC Needed