

Tissue-Tek Genie®

anti-ALK (Lung) Mouse Monoclonal Antibody [1A4]

Instructions for use

Intended use

For *in vitro* diagnostic use.

Tissue-Tek Genie® anti-ALK (Lung) Mouse Monoclonal Antibody [1A4] is an antibody designed to qualitatively detect ALK protein in formalin-fixed, paraffin embedded (FFPE) specimen sections by immunohistochemistry (IHC) staining on the Tissue-Tek Genie® Advanced Staining System. The clinical interpretation must be made in conjunction with histological examination, relevant clinical information, other diagnostic tests and proper controls by a qualified pathologist.

Limitations

This product has been optimized for use with the default protocol for this antibody on the Tissue-Tek Genie Advanced Staining System, using Tissue-Tek Genie® reagents and FFPE specimen sections. Staining quality may diminish when used with other systems and/or reagents.

Summary and principle

Anaplastic Lymphoma Kinase (ALK) is a transmembrane receptor tyrosine kinase. In normal tissue ALK is expressed only few cells within developing and mature nervous system including glial cells, neurons, endothelial cells, and pericytes. ALK was originally discovered as a nucleophosmin (NPM) fusion protein produced by a translocation between the NPM and ALK gene and is associated with anaplastic lymphoma (ALCL). A fusion protein EML4-ALK was discovered in non-small cell lung carcinoma (NSCLC)

cell lines and has been found in 3-7% of NSCLC samples. Other fusion partners, such as TRK-fused gene (TFG) and KIF5B, are also associated with NSCLC. The ALK gene was found to form a fusion gene with several other genes, e.g. TPM3, ATIC, CLTC1, TMP4, MSN, ALO17, MYH9, RANBP2, and SQSTM1. Gaining additional ALK gene copies or with mutations was also evident in certain cancers. Multiple small inversions on chromosome 2p generate in-frame fusions of the EML4 and ALK genes which cause the detection of some EML4-ALK variants is challenging by FISH probes. The anti-ALK (Lung) antibody is useful for assessing ALK protein expression status in human lung carcinoma when used in a panel with other antibodies.

The Tissue-Tek Genie anti-ALK (Lung) Mouse Monoclonal Antibody [1A4] is a primary antibody against the human ALK protein and is provided in buffered saline containing 1% bovine serum albumin and 0.09% sodium azide. FFPE specimen sections are placed on positively charged slides and the paraffin is removed using the Tissue-Tek Genie® Dewax Solution (REF 8865-G001), after which heat-induced epitope retrieval is performed using the Tissue-Tek Genie® High pH Antigen Retrieval Solution (REF 8744-G001).

IHC demonstration of ALK in FFPE specimen sections is achieved through use of the Tissue-Tek Genie anti-ALK (Lung) Mouse Monoclonal Antibody [1A4] and the Tissue-Tek Genie® Pro Detection Kit, DAB (REF 8826-K250). This procedure entails the sequential application of antibody and kit components as follows:

- Tissue-Tek Genie® Protein Block

- Tissue-Tek Genie® anti-ALK (Lung) Mouse Monoclonal Antibody [1A4]
- Tissue-Tek Genie® Peroxidase Block
- Tissue-Tek Genie® Link (binds to the primary antibody)
- Tissue-Tek Genie® Polymer HRP-Conjugate (binds to the link)
- Tissue-Tek Genie® DAB Substrate (visualizes the detected protein)

Tissue-Tek Genie® Hematoxylin (REF 8830-M250) is then used to visualize the nuclei of cells. The IHC stained slide is cover-slipped and the FFPE specimen section reviewed using a light microscope.

Expected results

Specificity and intended use of this antibody were validated by performing IHC staining on the Tissue-Tek Genie Advanced Staining System using FFPE normal and tumor specimen sections.

In appendix, granular cytoplasmic staining of ganglion cells is observed; epithelial cells in appendix are negative. Cytoplasmic staining of neoplastic cells is observed in some Merkel cell carcinomas, small numbers of lung adenocarcinoma, and some ALCLs. Nuclear and cytoplasmic staining of ALK is observed in neoplastic cells of ALCL.

Sensitivity and identification of ALK protein by this antibody may be affected by improper specimen handling. This may alter antigenicity, weaken detection and may generate false negative results.

Cellular staining pattern: primarily cytoplasmic staining; nuclear staining may occur in some tissues, particularly ALCL

Positive specimen control: appendix, Merkel cell carcinoma, ALK positive lung adenocarcinoma, and ALK positive ALCL

Cautions and warnings

For professional use only. Take reasonable precautions when handling. Avoid contact of reagents with eyes, skin, and mucous membranes. Wear protective gloves, clothing, and eye/face protection.

Capsules filled with ready-to-use, pre-diluted, antibody are for single use only. Do not attempt to refill or add additional reagent. Discard capsule after use.

Cartridges filled with ready-to-use, pre-diluted, antibody are intended for multiple uses. Do not attempt to refill or add additional reagent. Discard cartridge when empty.

It is recommended to include appropriate controls on each specimen slide to help in identifying any deviation that might occur during the staining process.

All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Refer to the SDS for further information.

Storage conditions

Store this product at 2-8°C.

Instructions for use

Tissue-Tek Genie® anti-ALK (Lung) Mouse Monoclonal Antibody [1A4], capsules (REF 8330-C010):

1. Place the Tissue-Tek Genie® Reagent Dispensing Area Tag (RDA-Tag) attached to the capsule into the RDA.
2. Push the capsule into the RDA with foil side down and click the attached RDA-Tag down into place on the RDA.
3. Place the RDA on the desired station of the Tissue-Tek Genie Advanced Staining System.
4. Place the slide with the specimen section on the same station, specimen section side down.
5. Assign protocol 8330 to the same station.
6. Initiate execution of protocol 8330.
7. The RDA-Tag 8330 will be scanned and registered automatically when the staining process is initiated.
8. During the primary antibody application step, the antibody will be released from the capsule into the RDA and onto the specimen section on the slide.
9. The staining protocol continues to the end.

Tissue-Tek Genie® anti-ALK (Lung) Mouse Monoclonal Antibody [1A4], cartridge (REF 8330-M250):



1. Prior to placing the cartridge on the carousel of the Tissue-Tek Genie Advanced Staining System, prime the cartridge by facing the nozzle downwards and gently pinching the nozzle tubing until the tubing is filled with the reagent.
2. Place the cartridge on the carousel.
3. Click the RDA-Tag 8330 into place on the RDA.
4. Place the RDA on the desired station of the Tissue-Tek Genie Advanced Staining System.
5. Place the slide with the specimen section on the same station, specimen section side down.
6. Assign protocol 8330 to the same station.
7. Initiate execution of protocol 8330.
8. The RDA-Tag 8330 and the cartridge will be scanned and registered automatically when the staining process is initiated.
9. During the primary antibody application step, the antibody will be dispensed from the cartridge into the RDA and onto the specimen section on the slide.
10. The staining protocol continues to the end.

Material required but not supplied

The following reagents may be required for staining but are not provided:

- Tissue-Tek Genie® Dewax Solution (REF 8865-G001)
- Tissue-Tek Genie® Wash Solution (REF 8874-G004)
- Tissue-Tek Genie® High pH Antigen Retrieval Solution (REF 8744-G001)
- Tissue-Tek Genie® Non-Immune Mouse Ig Antibody, Negative Control (REF 8604-C010, 8604 -M250)
- Tissue-Tek Genie® Pro Detection Kit, DAB (REF 8826-K250)
- Tissue-Tek Genie® Hematoxylin (REF 8830-M250)

Further information can be found on the Sakura Finetek USA website at www.sakuraus.com/Genie

Order information

Product code, product name and quantity

(REF) 8330-C010 Tissue-Tek Genie® anti-ALK (Lung) Mouse Monoclonal Antibody [1A4], Ready-To-Use, 10 capsules; 1 pack.

(REF) 8330-M250 Tissue-Tek Genie® anti-ALK (Lung) Mouse Monoclonal Antibody [1A4], Ready-To-Use, 250 tests, 1 cartridge; 1 unit.

This product is not available in the U.S.A.

NOTE: The Safety Data Sheet (SDS) is available online on the Sakura Finetek USA website at www.sakuraus.com/SDS.html

References








1. Selinger CI, et al. Mod Pathol. 2013; 26:1545-1553
2. Gruber K, et al. J Thorac Oncol. 2015; 10:713-716
3. Shen Y, et al. FASEB J. 2015;29 Suppl.1:417.11
4. Wang Q, et al. Lung Cancer. 2016; 95:39-43
5. Hofman P. Cancers (Basel). 2017; 9:107
6. Van den Borne BE S, et al. Clin Cancer Res. 2017; 23:4251-4258
7. Van der Wekken AJ, et al. Clin Cancer Res. 2017; 23:4251-8
8. Della Corte et al. Molecular Cancer. 2018; 17:30

Contact

If located within the United States, contact Sakura Finetek USA, Inc. by calling toll free **1-800-725-8723** or contact your Sakura Finetek representative or authorized distributor.

In countries, other than the United States, contact the nearest authorized Sakura Finetek instrument distributor or representative. Contact details may be found at www.sakura.com

Symbols

| | |
|---|---|
|  | Catalog number |
|  | Batch code |
|  | <i>in vitro</i> diagnostic medical device |
|  | Temperature limitation |
|  | Use by |
|  | Manufacturer |
|  | Consult instructions for use |
|  | European Conformity |
|  | Authorized representative in the European Community |

Storage: 2°C  8°C







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