TTF-1

Concentrated and Prediluted Monoclonal Antibody
902-087-090619

BIOCARE MEDICAL

Catalog Number:	**ACR 087 A, B, C**	**APR 087 AA, H**
Description:	0.1, 0.5, 1.0 mL, conc.	6.0, 25 mL, RTU
Dilution:	1:100	Ready-to-use
Diluent:	Renoir Red	N/A

Intended Use:
For Research Use Only. Not for use in diagnostic procedures.

Summary and Explanation:
Thyroid transcription factor-1 (TTF-1) contains a homeodomain necessary and sufficient for its DNA-binding activity, and is most closely related to the NKX2 family of homeodomain transcription factors (1,2). TTF-1 is expressed by epithelial cells of thyroid, lung, and in discrete regions of the developing brain (3-6). Studies have shown the specificity of TTF-1 as a marker for pulmonary and thyroid adenocarcinomas, with no reactivity to breast, stomach, ovarian, pancreaticobiliary, kidney, or colorectal adenocarcinomas (7-9). TTF-1 can be very useful in determining tumor origin when used in a panel with CK7, CK20, CDX2, CEA, MUC2, MUC5A4, SMAD4, ER, and GCDFP-15 antibodies (9).

Principle of Procedure:
Antigen detection in tissues and cells is a multi-step immunohistochemical process. The initial step binds the primary antibody to its specific epitope. A secondary antibody may be applied to bind the primary antibody, followed by an enzyme labeled polymer; or an enzyme labeled polymer may be applied directly to bind the primary antibody. The detection of the bound primary antibody is evidenced by an enzyme-mediated colorimetric reaction.

Source: Mouse monoclonal
Species Reactivity: Human; others not tested
Clone: 8G7G3/1
Isotype: IgG1
Protein Concentration: Call for lot specific Ig concentration.
Epitope/Antigen: TTF-1 (Thyroid transcription factor-1)
Cellular Localization: Nuclear
Positive Tissue Control: Lung adenocarcinoma or thyroid

Known Applications:
Immunohistochemistry (formalin-fixed paraffin-embedded tissues)
Supplied As: Buffer with protein carrier and preservative

Storage and Stability:
Store at 2ºC to 8ºC. The product is stable to the expiration date printed on the label, when stored under these conditions. Do not use after expiration date. Diluted reagents should be used promptly; any remaining reagent should be stored at 2ºC to 8ºC.

Staining Protocol Recommendations (intelliPATH FLX® and manual use):
Peroxide Block: Block for 5 minutes with Peroxidazed 1.
Pretreatment: Perform heat retrieval using Diva Decloaker. Refer to the Diva Decloaker data sheet for specific instructions.
Protein Block (Optional): Incubate for 5-10 minutes at RT with Background Punisher.
Primary Antibody: Incubate for 30 minutes at RT.
Probe: Incubate for 10 minutes at RT with a secondary probe.
Polymer: Incubate for 10-20 minutes at RT with a tertiary polymer.
Chromogen: Incubate for 5 minutes at RT with Biocare's DAB - OR - Incubate for 5-7 minutes at RT with Warp Red.

Counterstain:
Counterstain with hematoxylin. Rinse with deionized water. Apply Tacha's Bluing Solution for 1 minute. Rinse with deionized water.

Technical Note:
1. Literature reports suggest that high pH antigen retrieval solutions should not be used when staining TTF-1. Therefore, antigen retrieval with Diva (pH 6.2) is strongly recommended.
2. This antibody, for intelliPATH FLX and manual use, has been standardized with MACH 4 detection system. Use TBS for washing steps.

Limitations:
This product is provided for Research Use Only (RUO) and is not for use in diagnostic procedures. Suitability for specific applications may vary and it is the responsibility of the end user to determine the appropriate application for its use.

Precautions:
1. This antibody contains less than 0.1% sodium azide. Concentrations less than 0.1% are not reportable hazardous materials according to U.S. 29 CFR 1910.1200, OSHA Hazard communication and EC Directive 91/155/EC. Sodium azide (NaN_3) used as a preservative is toxic if ingested. Sodium azide may react with lead and copper plumbing to form highly explosive metal azides. Upon disposal, flush with large volumes of water to prevent azide build-up in plumbing. (Center for Disease Control, 1976, National Institute of Occupational Safety and Health, 1976) (10)
2. Specimens, before and after fixation, and all materials exposed to them should be handled as if capable of transmitting infection and disposed of with proper precautions. Never pipette reagents by mouth and avoid contacting the skin and mucous membranes with reagents and specimens. If reagents or specimens come into contact with sensitive areas, wash with copious amounts of water. (11)
3. Microbial contamination of reagents may result in an increase in nonspecific staining.
4. Incubation times or temperatures other than those specified may give erroneous results. The user must validate any such change.
5. Do not use reagent after the expiration date printed on the vial.
6. The SDS is available upon request and is located at http://biocare.net.

Technical Support:
Contact Biocare's Technical Support at 1-800-542-2002 for questions regarding this product.

References:

1. Di Loreto C, *et al*. TTF-1 protein expression in pleural malignant mesotheliomas and adenocarcinomas of the lung. Cancer Lett. 1998 Feb 13;124(1):73-8.
2. Di Loreto C, *et al*. Immunocytochemical expression of tissue specific transcription factor-1 in lung carcinoma. J Clin Pathol. 1997 Jan;50(1):30-2.
3. Lazzaro D, *et al*. The transcription factor TTF-1 is expressed at the onset of thyroid and lung morphogenesis and in restricted regions of the foetal brain. Development. 1991 Dec;113(4):1093-104.
4. Stahlman MT, Gray ME, Whitsett JA. Expression of thyroid transcription factor-1 (TTF-1) in fetal and neonatal human lung. J Histochem Cytochem. 1996 Jul;44(7):673-8.
5. Bejarano PA, *et al.* Surfactant proteins and thyroid transcription factor-1 in pulmonary and breast carcinomas. Mod Pathol. 1996 Apr;9(4):445-52.
6. Fabbro D, *et al.* TTF-1 gene expression in human lung tumours. Eur J Cancer. 1996 Mar;32A(3):512-7.
7. Holzinger A, *et al.* Monoclonal antibody to thyroid transcription factor-1: production, characterization, and usefulness in tumor diagnosis. Hybridoma. 1996 Feb;15(1):49-53.
8. Moldvay J, *et al*. The role of TTF-1 in differentiating primary and metastatic lung adenocarcinomas. Pathol Oncol Res. 2004;10(2):85-8.
9. Park SY, *et al*. Panels of immunohistochemical markers help determine primary sites of metastatic adenocarcinoma. Arch Pathol Lab Med. 2007 Oct;131(10):1561-7.
10. Center for Disease Control Manual. Guide: Safety Management, NO. CDC-22, Atlanta, GA. April 30, 1976 "Decontamination of Laboratory Sink Drains to Remove Azide Salts."
11. Clinical and Laboratory Standards Institute (CLSI). Protection of Laboratory Workers from Occupationally Acquired Infections; Approved Guideline-Fourth Edition CLSI document M29-A4 Wayne, PA 2014.

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