GENE BIO SOLUTION

TTF-1 [SPT24]

Format	Catalog No.	Pack size	Dilution
Concentrated	GB3126A,C	0.1, 0.1 mL	1:100
Prediluted	GB3126AA	6.0 mL	Ready to use

PRODUCT DESCRIPTION -

Thyroid transcription factor-1 (TTF-1) is a 38 kDa constituent of the NKX2 family of homeodomain transcription factors. TTF-1 is predominantly identified in primary lung adenocarcinomas and small cell carcinomas. TTF-1 is highly beneficial in lung malignancies when utilized in conjunction with Desmoglein 3, p40, and Napsin A antibodies.

Monoclonal antibodies 8G7G3/1 and SPT24, commercially available for thyroid transcription factor-1 (TTF-1), exhibit varying sensitivities in lung adenocarcinomas (LADC) and lung squamous cell carcinomas (SqCC). A study by Masai et al. revealed that SPT24 had much greater sensitivity than 8G7G3/1 in LADC, with rates of 72.4% and 65.4%, respectively. The findings indicated that SPT24 exhibited a greater staining percentage in lung SqCC (16.8% compared to 1%). The increased sensitivity of SPT24 in lung squamous cell carcinoma is significantly affected by various detection techniques.

SPT24 can produce greater sensitivity for LADC compared to lung SqCC, relative to 8G7G3/1, while maintaining specificity by the application of a cut-off value and appropriate antibody titer. In an internal research, SPT24 was titrated to attain negative staining in normal liver, with no cytoplasmic staining detected. A cut-off threshold of ≥10% of tumor cells exhibiting TTF-1 positivity with a staining intensity of ≥ 1+ was employed to ascertain TTF-1 positive instances. Employing this methodology, SPT24 shown significant sensitivity for LADC (53/60, 88%), in contrast to 8G7G3/1 (38/60, 63%), although both clones exhibited comparable specificity against lung SqCC (2/137, 1.5%).

The utilization of lung SqCC-specific markers, including Desmoglein 3 and p40, may discern TTF-1 positive instances of squamous cell genesis. The application of Napsin A may validate lung adenocarcinoma, as the co-expression of Napsin A and TTF-1 in lung malignancies has demonstrated more pulmonary specificity than either marker employed independently. In contrast to clone 8G7G3/1, clone SPT24 has not exhibited any cytoplasmic staining in lung tumors.

INTENDED USE -

TTF-1 [SPT24] is a mouse monoclonal antibody designed for professional laboratory application following the initial tumor diagnosis via conventional histopathology with nonimmunologic histochemical stains, for the qualitative detection of TTF-1 protein through immunohistochemistry (IHC) in formalin-fixed paraffin-embedded (FFPE) human tissues. The clinical interpretation of any staining or its absence must be supplemented by morphological studies utilizing appropriate controls and assessed in conjunction with the patient's clinical history and other diagnostic tests by a qualified pathologist to assist in making further clinical determinations.

SUMMARY AND EXPLANATION -

Thyroid transcription factor-1 (TTF-1) is a 38 kDa constituent of the NKX2 family of homeodomain transcription factors. TTF-1 is predominantly identified in primary lung adenocarcinomas and small cell carcinomas. TTF-1 is highly beneficial in lung malignancies when utilized in conjunction with Desmoglein 3, p40, and Napsin A antibodies.

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PRINCIPLE OF PROCEDURE -

This antibody product can serve as the primary antibody in immunohistochemistry assays of formalin-fixed, paraffin-embedded tissue slices. Immunohistochemical (IHC) staining techniques facilitate the visualization of antigens through the sequential application of a specific primary antibody to the antigen, followed by a secondary antibody to the primary antibody (optional link antibody/probe), an enzyme complex, and a chromogenic substrate, interspersed with washing steps. The enzymatic activation of the chromogen produces a visible reaction product at the antigen location. The specimen may thereafter be counterstained and covered with a slip. Results are analyzed with a light microscope and assist in the differential diagnosis of pathophysiological processes, which may or may not correlate with a specific antigen.

SOURCE - Mouse monoclonal

SPECIES REACTIVITY - Human; others not tested

CLONE- SPT24

ISOTYPE - IgG1/kappa

PROTEIN CONCENTRATION - Call for lot specific Ig concentration.

EPITOPE/ANTIGEN - TTF-1 (Thyroid transcription factor-1)

CELLULAR LOCALISATION - Nuclear

POSITIVE TISSUE CONTROL - : Lung adenocarcinoma

KNOWN APPLICATIONS - Immunohistochemistry
30-40 min. At RT. Staining of formalin-fixed tissues requires heating tissue sections in between pH 7.4 - 9.0 for 45 min at 95ºC followed by cooling at room temperature for 20 minutes.

SUPPLIED AS - Buffered saline solution, pH 6.1-7.4, containing a protein carrier and less than 0.1% sodium azide 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.

Materials required but not provided -

1) Positivetissuecontrol- :Lungadenocarcinoma
2) Negativecontroltissue(internalorexternal)
3) Microscopeslidesandcoverslips
4) Stainingjarsorbaths
5) Timer
6) Xyleneorxylenesubstitute
7) Ethanolorreagentalcohol
8) Deionizedordistilledwater
9) Heatingequipmentorenzymefortissuepretreatmentstep
10) Detection system
11) Chromogen
12) Wash buffer
13) Hematoxylin
14) Antibody diluents
15) Peroxide block
16) Light microscope
17) Mounting medium

LIMITATIONS-

The optimum antibody dilution and protocols for a specific application can vary. These include, but are not limited to fixation, heat-retrieval method, incubation times, tissue section thickness and detection kit used. Due to the superior sensitivity of these unique reagents, the recommended incubation times and titers listed are not applicable to other detection systems, as results may vary. The data sheet recommendations and protocols are based on exclusive use of Genebio products. Ultimately, it is the responsibility of the investigator to determine optimal conditions.