ANTIGEN: Thyroid Transcription Factor (TTF-1)

ANTISERUM: Dako (M3575). Mouse monoclonal antibody. Clone: 8G7G3/1. Isotype: IgG1k

IMMUNOGEN: recombinant rat TTF-1

INTRODUCTION: Thyroid transcription factor-1 (TTF-1) belongs to a family of homeodomain transcription factors and is selectively expressed in thyroid, lung and diencephalon. TTF-1 has been identified as a transcriptional regulator of thyroid-specific genes and has also been shown to be important in the activation of pulmonary-specific differentiation genes. Clone 8G7G3/1 reacts with rat, mouse and human TTF-1.

REACTIVITY ACCORDING TO MANUFACTURER:

Normal tissues: It demonstrates Clara cells and type II cells of the lung and follicular cells from thyroid. It is unreactive with other tissues examined including prostate, pituitary, testes, adrenal gland, skin, mammary gland, kidney, colon, liver, pancreas, small intestine, brain, and stomach.

Abnormal tissues: It is positive in the majority of pulmonary small cell carcinomas and primary and metastatic pulmonary adenocarcinomas. About 26% of undifferentiated lung carcinomas were negative. Squamous cell carcinomas of the lung are also negative. TTF-1 is positive in most atypical pulmonary carcinoids but not in typical carcinoids. It is also reactive in thyroid papillary carcinomas. Some focal staining can be found in endometrial adenocarcinomas and gastric adenocarcinomas (using a polyclonal antibody to TTF-1).

STAINING PROCEDURE ACCORDING TO MANUFACTURER:

Formalin-fixed, paraffin-embedded tissues: LSAB+/PO at 1/200 or LSAB2/PO at 1/50. Heat antigen retrieval is mandatory (40 minute heating protocol).

Frozen sections: It is also possible with this antibody.

WORKING DILUTION: 1/10000. Pretreatment with steamer (EDTA, pH 8.0) 40 minutes.

METHOD: ENVISION+/PO, 90 min., RT

CELLS/TISSUES STAINED (canine tissues unless specified):

The staining is nuclear.

Lung: Numerous epithelial cells of bronchioles. Large airways are mostly unreactive. Numerous alveolar cells with plump nuclei are also positive. No apparent staining of endothelium, lymphoid cells or stroma.

Pulmonary carcinoma: Intense staining of neoplastic cells.

Normal thyroid: Nuclear staining of some follicular cells and probably some C-cells.

Parathyroid gland is negative.

Thyroid neoplasia: Positive staining in the majority of follicular tumors and about 45-50% of C-cell tumors. It is slightly less sensitive than thyroglobulin (follicular tumors) and much less sensitive than calcitonin (C-cell tumors).
REFERENCES:


Folpe AL, hansen D, Gown AM, Schmidt RA (1998) Expression of thyroid transcription factor-1 (TTF-1) is common in pulmonary atypical carcinoids and small cell carcinomas, but not typical carcinoids. Lab Invest 78:174A


