TTF-1 (E-4): sc-514992

SANTA CRUZ®
BIOTECHNOLOGY

The Power to Question

BACKGROUND

TTF-1 (thyroid transcription factor-1, BCH, BHC, NK-2, Nkx2.1, Nkx2A, TEBP, TTF1) is a member of the Nkx2 family of homeodomain-containing transcription factors and regulates the transcriptional activity of thyroid-specific genes. TTF-1 influences organogenisis and the maintenance of the differentiated phenotypes of various tissues including thyroid, lung and brain. TTF-1, which is present in the epithelium of the lung, regulates transcription of the surfactant proteins (SP) A, B and C and is essential for lung morphogenesis. In the thyroid, TTF-1 elevates the expression of thyroid specific markers, thyroglobulin, thyroperoxidase and thyrotropin receptors. TTF-1 interacts with SRC-1 and CBP *in vitro*.

REFERENCES

1. Zannini, M., et al. 1996. Mapping and functional role of phosphorylation sites in the thyroid transcription factor-1 (TTF-1). J. Biol. Chem. 271: 2249-2254.

2. Ohe, K., et al. 1996. Interferon-γ suppresses thyrotropin receptor promoter activity by reducing thyroid transcription factor-1 (TTF-1) binding to its recognition site. Mol. Endocrinol. 10: 826-836.

3. Nakazato, M., et al. 1997. Transcription of the thyroid transcription factor-1 (TTF-1) gene from a newly defined start site: positive regulation by TTF-1 in the thyroid. Biochem. Biophys. Res. Commun. 238: 748-752.

4. Oguchi, H., et al. 1998. Multiple transcripts encoded by the thyroid-specific enhancer-binding protein (T/EBP)/thyroid-specific transcription factor-1 (TTF-1) gene: evidence of autoregulation. Endocrinology 139: 1999-2006.

5. Katoh, R., et al. 2000. Expression of thyroid transcription factor-1 (TTF-1) in human C cells and medullary thyroid carcinomas. Hum. Pathol. 31: 386-393.

CHROMOSOMAL LOCATION

Genetic locus: NKX2-1 (human) mapping to 14q13.3, NKX2-4 (human) mapping to 20p11.22; Nkx2-1 (mouse) mapping to 12 C1, Nkx2-4 (mouse) mapping to 2 G2.

SOURCE

TTF-1 (E-4) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 7-28 at the N-terminus of TTF-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG$_1$ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-514992 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-514992 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

TTF-1 (E-4) is recommended for detection of TTF-1 and Nkx-2.4 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

TTF-1 (E-4) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of TTF-1: 38 kDa.

Positive Controls: TTF-1 (h2): 293T Lysate: sc-159187, SHP-77 whole cell lysate: sc-364258 or TT whole cell lysate: sc-364195.

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA
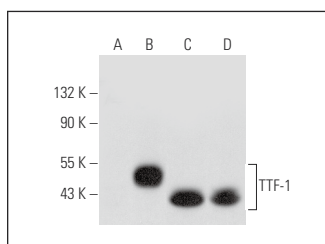
TTF-1 (E-4): sc-514992. Western blot analysis of TTF-1 expression in non-transfected 293T: sc-117752 (**A**), human TTF-1 transfected 293T: sc-159187 (**B**), TT (**C**) and SHP-77 (**D**) whole cell lysates.
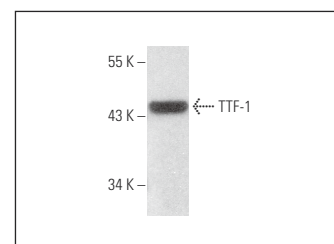
TTF-1 (E-4): sc-514992. Western blot analysis of TTF-1 expression in A549 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Leite, N.C., et al. 2020. Modeling type 1 diabetes *in vitro* using human pluripotent stem cells. Cell Rep. 32: 107894.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

CONJUGATES

See **TTF-1 (8G7G3/1): sc-53136** for TTF-1 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.