SANTA CRUZ BIOTECHNOLOGY, INC.

TCF-1A (C-21): sc-8590

BACKGROUND

T-cell factor-1 (TCF-1) is a DNA-binding transcriptional activator that is essential for lymphoid cell development. The TCF family of transcription factors are activated by the Wnt-1 and Wingless pathways and are characterized by the presence of a conserved protein motif, the high mobility group (HMG) 1 box, which mediates DNA binding. Several alternative splice variants of TCF-1 have been identified, including TCF-1A, which share a conserved amino terminus and differ in the carboxy terminal sequences. The Wnt mediated signaling pathway induces cytosolic β-catenin binding to TCF proteins within the nucleus, leading to the enhanced expression of the Wnt target genes. The β-catenin-TCF complexes are negatively regulated by the adenomatous polyposis coli (APC) tumor suppressor protein, which phosphorylates β-catenin and, in turn, increases the degradation of cytosolic β-catenin and inhibits the transcriptional activity of the TCF proteins. Mutations in the APC gene, which are commonly observed in colorectal carcinomas, disrupt this regulatory pathway and correlate with an accumulation of β-catenin and the increased activation of the TCF target genes.

REFERENCES

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2. Van de Wetering, M., et al. 1992. The human T cell transcription factor-1 gene. Structure, localization, and promoter characterization. J. Biol. Chem. 267: 8530-8536.
3. Verbeek, S., et al. 1995. An HMG-box-containing T-cell factor required for thymocyte differentiation. Nature 374: 70-74.
4. Mayer, K., et al. 1995. The human high mobility group (HMG)-box transcription factor TCF-1: novel isoforms due to alternative splicing and usage of a new exon IXA. Biochim. Biophys. Acta 1263: 169-172.
5. Morin, P.J., et al. 1997. Activation of β-catenin-TCF signaling in colon cancer by mutations in β-catenin or APC. Science 275: 1787-1790.
6. Young, C.S., et al. 1998. Wnt-1 induces growth, cytosolic β-catenin, and TCF/LEF transcriptional activation in Rat-1 fibroblasts. Mol. Cell. Biol. 18: 2474-2485.
7. Staal, F.J., et al. 1999. TCF-1-mediated transcription in T lymphocytes: differential role for glycogen synthase kinase-3 in fibroblasts and T cells. Int. Immunol. 11: 317-323.

CHROMOSOMAL LOCATION

Genetic locus: TCF7 (human) mapping to 5q31.1.

SOURCE

TCF-1A (C-21) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of TCF-1A of human origin.

STORAGE

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

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-8590 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-8590 X, 200 µg/0.1 ml.

APPLICATIONS

TCF-1A (C-21) is recommended for detection of TCF-1 isoform A of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

Suitable for use as control antibody for TCF-1 siRNA (h): sc-106926, TCF-1 shRNA Plasmid (h): sc-106926-SH and TCF-1 shRNA (h) Lentiviral Particles: sc-106926-V.

TCF-1A (C-21) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of TCF-1 splice variants: 22-55 kDa.

Positive Controls: MOLT-4 cell lysate: sc-2233.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

RESEARCH USE

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