

# TCF-1 (C-5): sc-271453

## 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  $\beta$ -catenin binding to TCF proteins within the nucleus, leading to the enhanced expression of the Wnt target genes. The  $\beta$ -catenin-TCF complexes are negatively regulated by the adenomatous polyposis coli (APC) tumor suppressor protein, which phosphorylates  $\beta$ -catenin and, in turn, increases the degradation of cytosolic  $\beta$ -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  $\beta$ -catenin and the increased activation of the TCF target genes.

## REFERENCES

1. Van de Wetering, M., et al. 1991. Identification and cloning of TCF-1, a T lymphocyte-specific transcription factor containing a sequence-specific HMG box. *EMBO J.* 10: 123-132.
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.

## CHROMOSOMAL LOCATION

Genetic locus: TCF7 (human) mapping to 5q31.1; Tcf7 (mouse) mapping to 11 B1.3.

## SOURCE

TCF-1 (C-5) is a mouse monoclonal antibody raised against amino acids 1-118 of TCF-1 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2a</sub> 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-271453 X, 200  $\mu$ g/0.1 ml.

TCF-1 (C-5) is available conjugated to agarose (sc-271453 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271453 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271453 PE), fluorescein (sc-271453 FITC), Alexa Fluor<sup>®</sup> 488 (sc-271453 AF488), Alexa Fluor<sup>®</sup> 546 (sc-271453 AF546), Alexa Fluor<sup>®</sup> 594 (sc-271453 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-271453 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-271453 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-271453 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

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## RESEARCH USE

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

## APPLICATIONS

TCF-1 (C-5) is recommended for detection of TCF-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

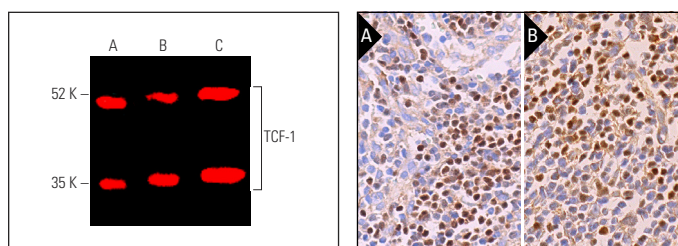
Suitable for use as control antibody for TCF-1 siRNA (h): sc-106926, TCF-1 siRNA (m): sc-36617, TCF-1 shRNA Plasmid (h): sc-106926-SH, TCF-1 shRNA Plasmid (m): sc-36617-SH, TCF-1 shRNA (h) Lentiviral Particles: sc-106926-V and TCF-1 shRNA (m) Lentiviral Particles: sc-36617-V.

TCF-1 (C-5) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

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

Positive Controls: SUP-T1 whole cell lysate: sc-364796, MOLT-4 cell lysate: sc-2233 or Jurkat whole cell lysate: sc-2204.

## DATA



TCF-1 (C-5): sc-271453. Near-infrared western blot analysis of TCF-1 expression in SUP-T1 (A), Jurkat (B) and MOLT-4 (C) whole cell lysates. Blocked with UltraCruz<sup>®</sup> Blocking Reagent: sc-516214. Detection reagent used: m-IgG<sub>2a</sub> BP-CFL 790: sc-542740.

TCF-1 (C-5): sc-271453. Immunoperoxidase staining of formalin fixed, paraffin-embedded human lymph node (A) and human tonsil (B) tissue showing membrane staining of glandular cells.

## SELECT PRODUCT CITATIONS

1. Kim, Y.M., et al. 2015. The anti-obesity effects of a tuna peptide on 3T3-L1 adipocytes are mediated by the inhibition of the expression of lipogenic and adipogenic genes and by the activation of the Wnt/ $\beta$ -catenin signaling pathway. *Int. J. Mol. Med.* 36: 327-334.
2. Chen, S., et al. 2020. Preactivation of  $\beta$ -catenin in osteoblasts improves the osteoanabolic effect of PTH in type 1 diabetic mice. *J. Cell. Physiol.* 235: 1480-1493.
3. Mascadri, F., et al. 2021. Background-free detection of mouse antibodies on mouse tissue by anti-isotype secondary antibodies. *J. Histochem. Cytochem.* 69: 535-541.
4. Ghobashi, A.H., et al. 2023. Activation of Akt induces EZH2-mediated  $\beta$ -catenin trimethylation in colorectal cancer. *iScience* 26: 107630.

## STORAGE

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