SANTA CRUZ BIOTECHNOLOGY, INC.

LEF-1 (2D12): sc-81470

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The TCF (T cell factor) 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. The TCF (T cell factor) proteins are required during development and they include TCF-1, which is essential for lymphoid cell development, TCF-3 and TCF-4, which are implicated in neuronal development and LEF (leukemia enhancer factor). 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 to, thereby, inhibit 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 to an accumulation of β-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.
3. Verbeek, S., et al. 1995. An HMG-box-containing T-cell factor required for thymocyte differentiation. Nature 374: 70-74.
4. 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.
5. 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.
6. Dorsky, R.I., et al. 1998. Control of neural crest cell fate by the Wnt signalling pathway. Nature 396: 370-373.
7. Barker, N., et al. 1999. Restricted high level expression of TCF-4 protein in intestinal and mammary gland epithelium. Am. J. Pathol. 154: 29-35.

CHROMOSOMAL LOCATION

Genetic locus: LEF1 (human) mapping to 4q25; Lef1 (mouse) mapping to 3 G3.

SOURCE

LEF-1 (2D12) is a mouse monoclonal antibody raised against amino acids 1-85 of recombinant LEF-1 of human origin.

PRODUCT

Each vial contains 50 µg IgG_1 in 0.5 ml of PBS with < 0.1% sodium azide, 0.1% gelatin, PEG and sucrose.

APPLICATIONS

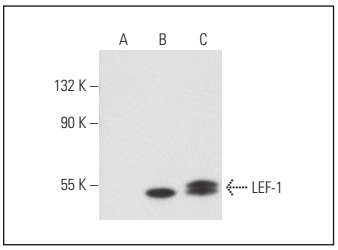
LEF-1 (2D12) is recommended for detection of LEF-1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for LEF-1 siRNA (h): sc-35804, LEF-1 siRNA (m): sc-35805, LEF-1 shRNA Plasmid (h): sc-35804-SH, LEF-1 shRNA Plasmid (m): sc-35805-SH, LEF-1 shRNA (h) Lentiviral Particles: sc-35804-V and LEF-1 shRNA (m) Lentiviral Particles: sc-35805-V.

Molecular Weight of LEF-1: 54 kDa.

Positive Controls: LEF-1 (h): 293T Lysate: sc-116288, Jurkat whole cell lysate: sc-2204 or HuT 78 whole cell lysate: sc-2208.

DATA



LEF-1 (2D12): sc-81470. Western blot analysis of LEF-1 expression in non-transfected 293T: sc-117752 (**A**), human LEF-1 transfected 293T: sc-116288 (**B**) and Jurkat (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Blanco, S., et al. 2016. Stem cell function and stress response are controlled by protein synthesis. Nature 534: 335-340.
2. Schnappauf, O., et al. 2016. Enhancer decommissioning by Snail1-induced competitive displacement of TCF7L2 and down-regulation of transcriptional activators results in EPHB2 silencing. Biochim. Biophys. Acta 1859: 1353-1367.

STORAGE

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

RESEARCH USE

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