SANTA CRUZ BIOTECHNOLOGY, INC.

FRAT1 (S-20): sc-8445

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The Power to Question

BACKGROUND

FRAT1 and FRAT2 were originally characterized as proteins frequently rearranged in advanced T cell lymphoma, and they have since been identified as proto-oncogenes involved in tumorigenesis. These proteins share significant homology with the *Xenopus* glycogen synthase kinase-3 (xGSK-3) binding protein, which is designated GBP and is essential for the formation of the dorsal-ventral axis during embryonic development. Establishment of these embryonic axes is mediated by the Wnt intracellular signaling pathway. Wnt signaling is regulated in part by the activity of GSK-3, which phosphorylates and thereby facilitates the degradation of β-catenin. GBP binds to GSK-3 and inhibits this phosphorylation, resulting in the accumulation of β-catenin and the subsequent transcription of Wnt target genes. Like GBP, FRAT2 has been shown to bind xGSK-3, suggesting that FRAT1 and FRAT2 may be GSK-3 regulatory proteins.

REFERENCES

1. Yost, C., et al. 1996. The axis-inducing activity, stability, and subcellular distribution of β-catenin is regulated in *Xenopus* embryos by glycogen synthase kinase 3. Genes Dev. 10: 1443-1454.
2. Jonkers, J., et al. 1997. Activation of a novel proto-oncogene, Frat1, contributes to progression of mouse T-cell lymphomas. EMBO J. 16: 441-450.
3. Aberle, H., et al. 1997. β-catenin is a target for the ubiquitin-proteasome pathway. EMBO J. 16: 3797-3804.
4. Yost, C., et al. 1998. GBP, an inhibitor of GSK-3, is implicated in *Xenopus* development and oncogenesis. Cell 93: 1031-1041.
5. Sumoy, L., et al. 1999. Conservation of intracellular Wnt signaling components in dorsal-ventral axis formation in zebrafish. Dev. Genes Evol. 209: 48-58.
6. Li, L., et al. 1999. Axin and Frat1 interact with dvl and GSK, bridging Dvl to GSK in Wnt-mediated regulation of LEF-1. EMBO J. 18: 4233-4240.

CHROMOSOMAL LOCATION

Genetic locus: FRAT1 (human) mapping to 10q24.1; Frat1 (mouse) mapping to 19 C3.

SOURCE

FRAT1 (S-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of FRAT1 of mouse origin.

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-8445 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

FRAT1 (S-20) is recommended for detection of FRAT1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

Suitable for use as control antibody for FRAT1 siRNA (h): sc-105373, FRAT1 siRNA (m): sc-145237, FRAT1 shRNA Plasmid (h): sc-105373-SH, FRAT1 shRNA Plasmid (m): sc-145237-SH, FRAT1 shRNA (h) Lentiviral Particles: sc-105373-V and FRAT1 shRNA (m) Lentiviral Particles: sc-145237-V.

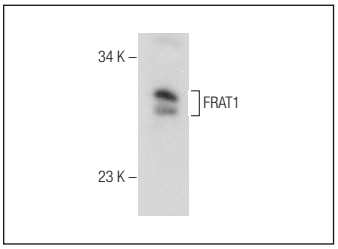
Molecular Weight of FRAT1: 29 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



FRAT1 (S-20): sc-8445. Western blot analysis of FRAT1 expression in HeLa whole cell lysate.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products