

# FRAT1 (U-25): sc-130756

## 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  $\beta$ -catenin. GBP binds to GSK-3 and inhibits this phosphorylation, resulting in the accumulation of  $\beta$ -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  $\beta$ -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.  $\beta$ -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.

## SOURCE

FRAT1 (U-25) is a purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of FRAT1 of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

## APPLICATIONS

FRAT1 (U-25) is recommended for detection of FRAT1 of human origin by Western Blotting (starting dilution 1:200, 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).

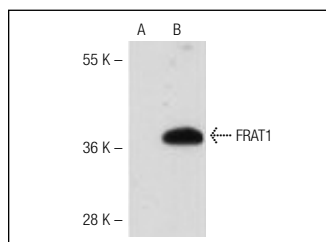
Suitable for use as control antibody for FRAT1 siRNA (h): sc-105373, FRAT1 shRNA Plasmid (h): sc-105373-SH and FRAT1 shRNA (h) Lentiviral Particles: sc-105373-V.

Molecular Weight of FRAT1: 29 kDa.

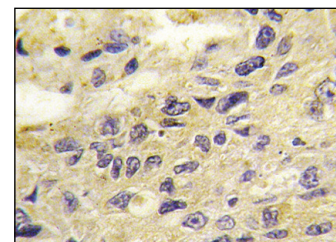
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

## DATA



FRAT1 (U-25): sc-130756. Western blot analysis of FRAT1 expression in non-transfected (A) and human FRAT1 transfected (B) 293 whole cell lysates.



FRAT1 (U-25): sc-130756. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human lung carcinoma tissue showing cytoplasmic localization.

## RESEARCH USE

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