SANTA CRUZ BIOTECHNOLOGY, INC.

FGD3 (D-3): sc-376120

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

FGD1 gene mutations result in faciogenital dysplasia (FGDY, Aarskog-Scott syndrome), an X-linked developmental disorder that adversely affects the formation of multiple skeletal structures. FGD1 maps to human chromosome Xp11.22 and shares a high degree of sequence identity with the FGD2 (6p21.2) and the FGD3 (9q22.31) proteins. FGD1 encodes a guanine nucleotide exchange factor that specifically activates the Rho GTPase Cdc42. FGD2 is present in several diverse tissues during embryogenesis, suggesting a role in embryonic development. FGD3 stimulates fibroblasts to form filopodia, which are Actin microspikes formed upon the stimulation of Cdc42. All FGD family members contain equivalent signaling domains and a conserved structural organization, which strongly suggests that these signaling domains form a canonical core structure for members of the FGD family of RhoGEF proteins. These proteins control essential signals required during embryonic development.

REFERENCES

1. Pasteris, N.G., et al. 1994. Isolation and characterization of the faciogenital dysplasia (Aarskog-Scott syndrome) gene: a putative Rho/Rac guanine nucleotide exchange factor. Cell 79: 669-678.
2. Olson, M.F., et al. 1996. Faciogenital dysplasia protein (FGD1) and Vav, two related proteins required for normal embryonic development, are upstream regulators of Rho GTPases. Curr. Biol. 6: 1628-1633.
3. Zheng, Y., et al. 1996. The faciogenital dysplasia gene product FGD1 functions as a Cdc42Hs-specific guanine-nucleotide exchange factor. J. Biol. Chem. 271: 33169-33172.
4. Pasteris, N.G., et al. 1997. Genomic organization of the faciogenital dysplasia (FGD1; Aarskog-Scott syndrome) gene. Genomics 43: 390-394.
5. Whitehead, I.P., et al. 1998. Cdc42 and FGD1 cause distinct signaling and transforming activities. Mol. Cell. Biol. 18: 4689-4697.
6. Pasteris, N.G. and Gorski, J.L. 1999. Isolation, characterization and mapping of the mouse and human FGD2 genes, faciogenital dysplasia (FGD1; Aarskog-Scott syndrome) gene homologues. Genomics 60: 57-66.
7. Pasteris, N.G., et al. 2000. Isolation, characterization, and mapping of the mouse FGD3 gene, a new faciogenital dysplasia (FGD1; Aarskog-Scott syndrome) gene homologue. Gene 242: 237-247.

CHROMOSOMAL LOCATION

Genetic locus: FGD3 (human) mapping to 9q22.31.

SOURCE

FGD3 (D-3) is a mouse monoclonal antibody raised against amino acids 1-75 mapping at the N-terminus of FGD3 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

FGD3 (D-3) is recommended for detection of FGD3 of 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), 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 FGD3 siRNA (h): sc-41715, FGD3 shRNA Plasmid (h): sc-41715-SH and FGD3 shRNA (h) Lentiviral Particles: sc-41715-V.

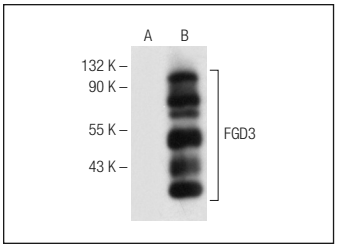
Molecular Weight of FGD3: 81 kDa.

Positive Controls: FGD3 (h2): 293T Lysate: sc-114923, A-431 whole cell lysate: sc-2201 or K-562 whole cell lysate: sc-2203.

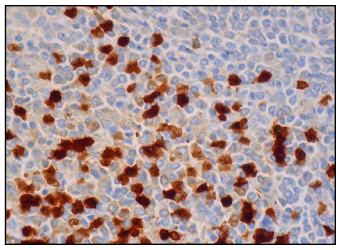
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



FGD3 (D-3): sc-376120. Western blot analysis of FGD3 expression in non-transfected: sc-117752 (**A**) and human FGD3 transfected: sc-114923 (**B**) 293T whole cell lysates.



FGD3 (D-3): sc-376120. Immunoperoxidase staining of formalin fixed, paraffin-embedded human spleen tissue showing cytoplasmic and nuclear staining of subset of cells in red pulp.

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 for detailed protocols and support products.