

DEF6 (SW-9): sc-81992

BACKGROUND

DEF6 (differentially expressed in FDCP 6), also known as IBP, is a 631 amino acid protein that is widely expressed in T and B cells of the immune system. Localized to the nucleus, cytoplasm and cell membrane, DEF6 is a phosphatidylinositol 3,4,5-trisphosphate-dependent guanine nucleotide exchange factor (GEF) that functions to activate Rho GTPases such as Rac 1, Cdc42 and Rho A. Via its ability to activate various Rho GTPases, DEF6 can regulate cell shape, movement and polarity and, through its interaction with T helper cells, DEF6 can also help mediate the immune response. DEF6 contains one PH (Pleckstrin homology) domain which is required for binding to phosphatidylinositol 3,4,5-trisphosphate and subsequent recruitment to the plasma membrane.

REFERENCES

1. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 610094. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
2. Gupta, S., et al. 2003. T cell receptor engagement leads to the recruitment of IBP, a novel guanine nucleotide exchange factor, to the immunological synapse. *J. Biol. Chem.* 278: 43541-43549.
3. Gupta, S., et al. 2003. Molecular cloning of IBP, a SWAP-70 homologous GEF, which is highly expressed in the immune system. *Hum. Immunol.* 64: 389-401.
4. Tanaka, Y., et al. 2003. SWAP-70-like adapter of T cells, an adapter protein that regulates early TCR-initiated signaling in Th2 lineage cells. *Immunity* 18: 403-414.
5. Mavrikis, K.J., et al. 2004. DEF6, a novel PH-DH-like domain protein, is an upstream activator of the Rho GTPases Rac 1, Cdc42 and Rho A. *Exp. Cell Res.* 294: 335-344.
6. Oka, T., et al. 2007. Cooperation of DEF6 with activated Rac in regulating cell morphology. *J. Biol. Chem.* 282: 2011-2018.
7. Samson, T., et al. 2007. DEF6, a guanine nucleotide exchange factor for Rac 1, interacts with the skeletal muscle integrin chain $\alpha 7A$ and influences myoblast differentiation. *J. Biol. Chem.* 282: 15730-15742.

CHROMOSOMAL LOCATION

Genetic locus: DEF6 (human) mapping to 6p21.31.

SOURCE

DEF6 (SW-9) is a mouse monoclonal antibody raised against recombinant protein corresponding to amino acids 1-336 of DEF6 of human origin.

PRODUCT

Each vial contains 50 μ g IgG_{2a} kappa light chain in 500 μ l of 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.

APPLICATIONS

DEF6 (SW-9) is recommended for detection of DEF6 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ 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 DEF6 siRNA (h): sc-105283, DEF6 shRNA Plasmid (h): sc-105283-SH and DEF6 shRNA (h) Lentiviral Particles: sc-105283-V.

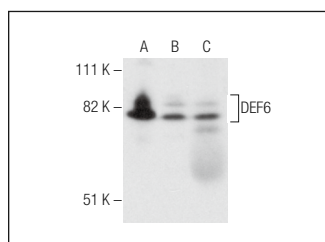
Molecular Weight of DEF6: 74 kDa.

Positive Controls: Jurkat whole cell lysate: sc-2204, Raji whole cell lysate or human lymph node extract: sc-363768.

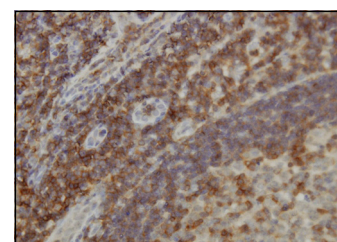
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ 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-IgG κ BP-FITC: sc-516140 or m-IgG κ 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-IgG κ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



DEF6 (SW-9): sc-81992. Western blot analysis of DEF6 expression in Jurkat (A) and Raji (B) whole cell lysates and human lymph node tissue extract (C).



DEF6 (SW-9): sc-81992. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human lymph node tissue showing membrane and cytoplasmic localization.

RESEARCH USE

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

PROTOCOLS

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