

DbI (M-138): sc-28583

BACKGROUND

The superfamily of GTP binding proteins, for which the Ras proteins are prototypes, has been implicated in regulation of a broad range of biological activities. One member of the family, Cdc42Hs (originally referred to as Gp or G25K), appears to represent the human homolog of the *Saccharomyces cerevisiae* cell division protein, Cdc42Sc. The predicted amino acid sequence of Cdc42Hs is very similar to those of various members of the Ras superfamily proteins including N-, K- and H-Ras proteins (30-35% identical), Rho proteins (50% identical) and the Rac proteins (70% identical). A second *S. cerevisiae* protein, Cdc24, which is known from complementation studies to act with Cdc42Sc to regulate the development of normal cell shape in yeast, contains a region of sequence homology with the DbI oncogene product. DbI specifically catalyzes the dissociation of GDP from Cdc42Hs, thus representing a highly selective guanine nucleotide exchange factor for Cdc42Hs.

REFERENCES

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2. Ron, D., et al. 1988. Molecular cloning and characterization of the human DbI proto-oncogene: evidence that its overexpression is sufficient to transform NIH/3T3 cells. *EMBO J.* 7: 2465-2473.
3. Hall, A. 1990. The cellular functions of small GTP-binding proteins. *Science* 249: 635-640.
4. Bourne, H.R., et al. 1990. The GTPase superfamily: a conserved switch for diverse cell functions. *Nature* 348: 125-132.
5. Adams, A.E.M., et al. 1990. CDC42 and CDC43, two additional genes involved in budding and the establishment of cell polarity in the yeast *Saccharomyces cerevisiae*. *J. Cell Biol.* 111: 131-142.
6. Munemitsu, S., et al. 1990. Molecular cloning and expression of a G25K cDNA, the human homolog of the yeast cell cycle gene CDC42. *Mol. Cell. Biol.* 10: 5977-5982.
7. Shinjo, K., et al. 1990. Molecular cloning of the gene for the human placental GTP-binding protein Gp (G25K): identification of this GTP-binding protein as the human homolog of the yeast cell-division-cycle protein CDC42. *Proc. Natl. Acad. Sci. USA* 87: 9853-9857.
8. Hart, M.J., et al. 1991. Catalysis of guanine nucleotide exchange on the CDC42Hs protein by the DbI oncogene product. *Nature* 354: 311-314.

CHROMOSOMAL LOCATION

Genetic locus: Mcf2 (mouse) mapping to X A6.

SOURCE

DbI (M-138) is a rabbit polyclonal antibody raised against amino acids 791-928 mapping at the C-terminus of DbI 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.

APPLICATIONS

DbI (M-138) is recommended for detection of DbI of mouse and rat 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 DbI siRNA (m): sc-35182, DbI shRNA Plasmid (m): sc-35182-SH and DbI shRNA (m) Lentiviral Particles: sc-35182-V.

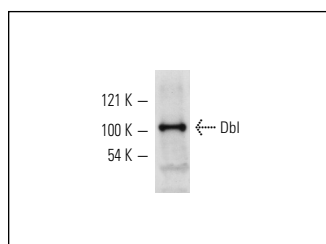
Molecular Weight of DbI: 102 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210.

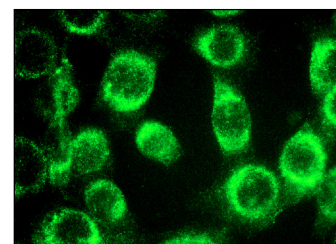
RECOMMENDED SECONDARY REAGENTS

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.

DATA



DbI (M-138): sc-28583. Western blot analysis of DbI expression in NIH/3T3 whole cell lysate.



DbI (M-138): sc-28583. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic localization.

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.

PROTOCOLS

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