

DOCK 5 (H-90): sc-98640

BACKGROUND

DOCK 5 (dedicator of cytokinesis protein 5) is a 1,870 amino acid protein belonging to the DOCK family of cytokinesis-regulating proteins. This cytoplasmic peripheral membrane protein activates Rac 1 and Rac 2 small GTPases, while presumably acting as a guanine nucleotide exchange factor (GEF), which exchanges bound GDP for free GTP. DOCK 5 contains one DHR-1 (CZH-1) domain, one DHR-2 (CZH-2) domain and one SH3 domain. The DHR-2 domain is a putative GEF activity mediator. In mice, spontaneous mutation of the gene encoding DOCK 5 leads to deletion of the DHR-1 domain, which functions to bind phospholipids and assists in protein-protein interactions, resulting in rupture of lens cataract (RLC). Due to siRNA knockdown studies, it is suspected that DOCK 5 may also be an important mediator of Crk II/Crk-L regulation of Caco-2 migration and spreading on COL4. There are two isoforms of DOCK 5 that exist as a result of alternative splicing events.

REFERENCES

- Côte, J.F. and Vuori, K. 2002. Identification of an evolutionarily conserved superfamily of DOCK 180-related proteins with guanine nucleotide exchange activity. *J. Cell Sci.* 115: 4901-4913.
- Sanders, M.A. and Basson, M.D. 2004. Collagen IV regulates Caco-2 migration and ERK activation via $\alpha 1\beta 1$ - and $\alpha 2\beta 1$ -integrin-dependent Src kinase activation. *Am. J. Physiol. Gastrointest. Liver Physiol.* 286: G547-G557.
- Côte, J.F., Motoyama, A.B., Bush, J.A. and Vuori, K. 2005. A novel and evolutionarily conserved PtdIns(3,4,5)P3-binding domain is necessary for DOCK180 signalling. *Nat. Cell Biol.* 7: 797-807.
- Takahashi, K., Kohno, T., Ajima, R., Sasaki, H., Minna, J.D., Fujiwara, T., Tanaka, N. and Yokota, J. 2006. Homozygous deletion and reduced expression of the DOCK8 gene in human lung cancer. *Int. J. Oncol.* 28: 321-328.
- Omi, N., Kiyokawa, E., Matsuda, M., Kinoshita, K., Yamada, S., Yamada, K., Matsushima, Y., Wang, Y., Kawai, J., Suzuki, M., Hayashizaki, Y. and Hiai, H. 2008. Mutation of DOCK 5, a member of the guanine exchange factor DOCK 180 superfamily, in the rupture of lens cataract mouse. *Exp. Eye Res.* 86: 828-834.
- Hara, S., Kiyokawa, E., Iemura, S., Natsume, T., Wassmer, T., Cullen, P.J., Hiai, H. and Matsuda, M. 2008. The DHR1 domain of DOCK 180 binds to SNX5 and regulates cation-independent mannose 6-phosphate receptor transport. *Mol. Biol. Cell* 19: 3823-3835.
- Sanders, M.A., Ampasala, D. and Basson, M.D. 2009. DOCK 5 and DOCK 1 regulate Caco-2 intestinal epithelial cell spreading and migration on Collagen IV. *J. Biol. Chem.* 284: 27-35.

CHROMOSOMAL LOCATION

Genetic locus: DOCK5 (human) mapping to 8p21.2; Dock5 (mouse) mapping to 14 D1.

SOURCE

DOCK 5 (H-90) is a rabbit polyclonal antibody raised against amino acids 727-816 mapping within an internal region of DOCK 5 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

DOCK 5 (H-90) is recommended for detection of DOCK 5 of mouse, rat and 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

DOCK 5 (H-90) is also recommended for detection of DOCK 5 in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for DOCK 5 siRNA (h): sc-77473, DOCK 5 siRNA (m): sc-143135, DOCK 5 shRNA Plasmid (h): sc-77473-SH, DOCK 5 shRNA Plasmid (m): sc-143135-SH, DOCK 5 shRNA (h) Lentiviral Particles: sc-77473-V and DOCK 5 shRNA (m) Lentiviral Particles: sc-143135-V.

Molecular Weight of DOCK 5: 215 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.

SELECT PRODUCT CITATIONS

- Nagai, Y., Osawa, K., Fukushima, H., Tamura, Y., Aoki, K., Ohya, K., Yasuda, H., Hikiji, H., Takahashi, M., Seta, Y., Seo, S., Kurokawa, M., Kato, S., Honda, H., Nakamura, I., Maki, K. and Jimi, E. 2013. p130^{Cas} plays important roles in osteoclastic bone resorption. *J. Bone Miner. Res.* E-published.

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.