

# DOCK 4 (K-18): sc-70166

## BACKGROUND

DOCK 4 (dedicator of cytokinesis protein 4) is a cytoplasmic peripheral membrane protein that belongs to the DOCK family of cytokinesis-regulating proteins. Expressed ubiquitously with highest expression in prostate, ovary and skeletal muscle, DOCK 4 functions as a guanine nucleotide exchange factor (GEF) that activates the small GTPase Rap 1 and, via this activation, plays a role in the regulation of adherens junctions between cells. Similar to other DOCK family members, DOCK 4 contains an N-terminal SH3 domain, a C-terminal proline-rich region and two internal DOCK homology regions designated DHR1 and DHR2. Defects in the gene encoding DOCK 4 result in the inactivation of Rap 1 and are thus implicated in the pathogenesis of various cancers such as ovarian, prostate, glioma and colorectal carcinomas. Four isoforms of DOCK 4 are expressed due to alternative splicing events.

## REFERENCES

1. Côté, 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.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 607679. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
3. Yajnik, V., Paulding, C., Sordella, R., McClatchey, A.I., Saito, M., Wahrer, D.C., Reynolds, P., Bell, D.W., Lake, R., van den Heuvel, S., Settleman, J. and Haber, D.A. 2003. DOCK 4, a GTPase activator, is disrupted during tumorigenesis. *Cell* 112: 673-684.
4. Hiramoto, K., Negishi, M. and Katoh, H. 2006. DOCK 4 is regulated by RhoG and promotes Rac-dependent cell migration. *Exp. Cell Res.* 312: 4205-4216.
5. Yan, D., Li, F., Hall, M.L., Sage, C., Hu, W.H., Giallourakis, C., Upadhyay, G., Ouyang, X.M., Du, L.L., Bethea, J.R., Chen, Z.Y., Yajnik, V. and Liu, X.Z. 2006. An isoform of GTPase regulator DOCK 4 localizes to the stereocilia in the inner ear and binds to harmonin (USH1C). *J. Mol. Biol.* 357: 755-764.
6. Kwofie, M.A. and Skowronski, J. 2008. Specific recognition of Rac2 and Cdc42 by DOCK 2 and DOCK 9 guanine nucleotide exchange factors. *J. Biol. Chem.* 283: 3088-3096.

## CHROMOSOMAL LOCATION

Genetic locus: DOCK4 (human) mapping to 7q31.1; Dock4 (mouse) mapping to 12 B1.

## SOURCE

DOCK 4 (K-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of DOCK 4 of human origin.

## PRODUCT

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

Blocking peptide available for competition studies, sc-70166 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

DOCK 4 (K-18) is recommended for detection of DOCK 4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 4 (K-18) is also recommended for detection of DOCK 4 in additional species, including equine, bovine, porcine and avian.

Suitable for use as control antibody for DOCK 4 siRNA (h): sc-77170, DOCK 4 siRNA (m): sc-77171, DOCK 4 shRNA Plasmid (h): sc-77170-SH, DOCK 4 shRNA Plasmid (m): sc-77171-SH, DOCK 4 shRNA (h) Lentiviral Particles: sc-77170-V and DOCK 4 shRNA (m) Lentiviral Particles: sc-77171-V.

Molecular Weight of DOCK 4: 225 kDa.

Positive Controls: HeLa nuclear extract: sc-2120, HuT 78 whole cell lysate: sc-2208 or JAR cell lysate: sc-2276.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## 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](http://www.scbt.com) or our catalog for detailed protocols and support products.