

DOCK 7 (N-16): sc-104220

BACKGROUND

DOCK 7 (dedicator of cytokinesis 7), also known as ZIR2, is a 2,140 amino acid protein that localizes to developing axons and contains one DHR-1 domain and one DHR-2 domain. Expressed in a variety of tissues, DOCK 7 functions as a guanine nucleotide exchange factor (GEF) that specifically activates Rac 1 and Rac 3 by catalyzing the exchange of bound GDP for free GTP. Multiple isoforms of DOCK 7 exist due to alternative splicing events. The gene encoding DOCK 7 maps to human chromosome 1, which spans 260 million base pairs, contains over 3,000 genes and comprises nearly 8% of the human genome. Chromosome 1 houses a large number of disease-associated genes, including those that are involved in familial adenomatous polyposis, Stickler syndrome, Parkinson's disease, Gaucher disease, schizophrenia and Usher syndrome. Aberrations in chromosome 1 are found in a variety of cancers, including head and neck cancer, malignant melanoma and multiple myeloma.

REFERENCES

1. Côté, J.F. and Vuori, K. 2002. Identification of an evolutionarily conserved superfamily of DOCK180-related proteins with guanine nucleotide exchange activity. *J. Cell Sci.* 115: 4901-4913.
2. Nellist, M., Burgers, P.C., van den Ouweland, A.M., Halley, D.J. and Luider, T.M. 2005. Phosphorylation and binding partner analysis of the TSC1-TSC2 complex. *Biochem. Biophys. Res. Commun.* 333: 818-826.
3. Pinheiro, E.M. and Gertler, F.B. 2006. Nervous Rac: DOCK 7 regulation of axon formation. *Neuron* 51: 674-676.
4. Watabe-Uchida, M., John, K.A., Janas, J.A., Newey, S.E. and Van Aelst, L. 2006. The Rac activator DOCK 7 regulates neuronal polarity through local phosphorylation of stathmin/Op18. *Neuron* 51: 727-739.
5. Yamauchi, J., Miyamoto, Y., Chan, J.R. and Tanoue, A. 2008. ErbB2 directly activates the exchange factor DOCK 7 to promote Schwann cell migration. *J. Cell Biol.* 181: 351-365.
6. Rosner, M., Hanneder, M., Siegel, N., Valli, A. and Hengstschräger, M. 2008. The tuberous sclerosis gene products hamartin and tuberin are multifunctional proteins with a wide spectrum of interacting partners. *Mutat. Res.* 658: 234-246.
7. Blasius, A.L., Brandl, K., Crozat, K., Xia, Y., Khovananth, K., Krebs, P., Smart, N.G., Zampolli, A., Ruggeri, Z.M. and Beutler, B.A. 2009. Mice with mutations of DOCK 7 have generalized hypopigmentation and white-spotting but show normal neurological function. *Proc. Natl. Acad. Sci. USA* 106: 2706-2711.

CHROMOSOMAL LOCATION

Genetic locus: DOCK7 (human) mapping to 1p31.3; Dock7 (mouse) mapping to 4 C6.

SOURCE

DOCK 7 (N-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of DOCK 7 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-104220 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

DOCK 7 (N-16) is recommended for detection of DOCK 7 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); non cross-reactive with other DOCK family members.

DOCK 7 (N-16) is also recommended for detection of DOCK 7 in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for DOCK 7 siRNA (h): sc-88434, DOCK 7 siRNA (m): sc-105312, DOCK 7 shRNA Plasmid (h): sc-88434-SH, DOCK 7 shRNA Plasmid (m): sc-105312-SH, DOCK 7 shRNA (h) Lentiviral Particles: sc-88434-V and DOCK 7 shRNA (m) Lentiviral Particles: sc-105312-V.

Molecular Weight of DOCK 7: 241 kDa.

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 or our catalog for detailed protocols and support products.



Try **DOCK 7 (C-7): sc-398888** or **DOCK 7 (A-6): sc-398958**, our highly recommended monoclonal alternatives to DOCK 7 (N-16).