

# DOCK 7 (H-110): sc-292123

## 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. Côte, 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 Luijck, 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 (H-110) is a rabbit polyclonal antibody raised against amino acids 151-260 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.

## APPLICATIONS

DOCK 7 (H-110) 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), 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); non cross-reactive with other DOCK family members.

DOCK 7 (H-110) is also recommended for detection of DOCK 7 in additional species, including equine, canine, bovine, porcine and avian.

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 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.

## 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.


 MONOS  
 Satisfaction  
 Guaranteed

Try **DOCK 7 (C-7): sc-398888** or **DOCK 7 (A-6): sc-398958**, our highly recommended monoclonal alternatives to DOCK 7 (H-110).