

MOCA (T-20): sc-70185

BACKGROUND

MOCA (modifier of cell adhesion), also known as Presenilin-binding protein (PBP) or dedicator of cytokinesis protein 3 (DOCK3), is a 2,030 amino acid cytoplasmic protein belonging to the DOCK family. MOCA interacts with Presenilin proteins and has the ability to stimulate Tau phosphorylation suggesting that MOCA may be involved in Alzheimer disease. MOCA is also thought to be a guanine nucleotide exchange factor (GEF) which activates small GTPases by exchanging bound GDP for free GTP. Analysis of ectopic expression suggests that MOCA may affect the function of small GTPases involved in the regulation of Actin cytoskeleton or cell adhesion receptors. MOCA is localized to the neuropil, and sometimes in pyramidal cells, in normal brains, while in Alzheimer disease brains, MOCA is present in neurofibrillary tangles.

REFERENCES

- Chen, Q., Yoshida, H., Schubert, D., Maher, P., Mallory, M. and Masliah, E. 2001. Presenilin binding protein is associated with neurofibrillary alterations in Alzheimer's disease and stimulates Tau phosphorylation. *Am. J. Pathol.* 159: 1597-1602.
- Chen, Q., Kimura, H. and Schubert, D. 2002. A novel mechanism for the regulation of amyloid precursor protein metabolism. *J. Cell Biol.* 158: 79-89.
- 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.
- de Silva, M.G., Elliott, K., Dahl, H.H., Fitzpatrick, E., Wilcox, S., Delatycki, M., Williamson, R., Efron, D., Lynch, M. and Forrest, S. 2003. Disruption of a novel member of a sodium/hydrogen exchanger family and DOCK 3 is associated with an attention deficit hyperactivity disorder-like phenotype. *J. Med. Genet.* 40: 733-740.
- Namekata, K., Enokido, Y., Iwasawa, K. and Kimura, H. 2004. MOCA induces membrane spreading by activating Rac 1. *J. Biol. Chem.* 279: 14331-14337.
- Chen, Q., Chen, T.J., Letourneau, P.C., Costa, Lda.F. and Schubert, D. 2005. Modifier of cell adhesion regulates N-cadherin-mediated cell-cell adhesion and neurite outgrowth. *J. Neurosci.* 25: 281-290.
- Murray, E.B. and Edwards, J.W. 2005. Differential induction of micronuclei in peripheral lymphocytes and exfoliated urothelial cells of workers exposed to 4,4'-methylenebis-(2-chloroaniline) (MOCA) and bitumen fumes. *Rev. Environ. Health* 20: 163-176.
- Feller, S.M. and Lewitzky, M. 2006. Potential disease targets for drugs that disrupt protein—protein interactions of GRB2 and Crk family adaptors. *Curr. Pharm. Des.* 12: 529-548.
- Caspi, E. and Rosin-Arbesfeld, R. 2008. A novel functional screen in human cells identifies MOCA as a negative regulator of Wnt signaling. *Mol. Biol. Cell.* 19: 4660-4674.

CHROMOSOMAL LOCATION

Genetic locus: DOCK3 (human) mapping to 3p21.2; Dock3 (mouse) mapping to 9 F1.

SOURCE

MOCA (T-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of MOCA 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-70185 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

MOCA (T-20) is recommended for detection of MOCA 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).

MOCA (T-20) is also recommended for detection of MOCA in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for MOCA siRNA (h): sc-75804, MOCA siRNA (m): sc-75805, MOCA shRNA Plasmid (h): sc-75804-SH, MOCA shRNA Plasmid (m): sc-75805-SH, MOCA shRNA (h) Lentiviral Particles: sc-75804-V and MOCA shRNA (m) Lentiviral Particles: sc-75805-V.

Molecular Weight of MOCA: 233 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.