SANTA CRUZ BIOTECHNOLOGY, INC.

DOC4 (M-17): sc-10970

BACKGROUND

DOC4 is a mammalian ortholog of a *Drosophila* gene, Tenm/Odz, which is implicated in the patterning of the early fly embryo. DOC4, for downstream of CHOP, is induced in response to stress and participates in CHOP/GADD153 signaling pathway. DOC4 is a secreted protein that is expressed at high levels in certain cell types, while CHOP is a small nuclear protein that dimerizes avidly with members of the C/EBP family of transcription factor and is also induced in response to stress. The N-terminus peptide sequence of DOC4 is identical to a novel portion of heregulin, which is in fact formed from a rare gene chromosomal translocation event between DOC4 and the heregulin gene HGL. DOC4 (also designated Odz4) and several other mammalian homologs of *Drosophila* Tenm/Odz, mouse Odz3 and Odz2, all contain a putative signal peptide, eight EGF-like repeats, and a putative transmembrane domain followed by a 1,800-amino-acid stretch having unique sequence patterns from other proteins outside this family. The mouse genes Odz3 and DOC4/Odz4 exhibit partially overlapping, but clearly distinct, embryonic expression patterns, and Odz2 is predominantly expressed in the nervous system.

REFERENCES

1. Wang, X.Z., et al. 1998. Identification of novel stress-induced genes downstream of chop. EMBO J. 17: 3619-3630.
2. Otaki, J.M. and Firestein, S. 1999. Neurestin: putative transmembrane molecule implicated in neuronal development. Dev. Biol. 212: 165-181.
3. Ben-Zur, T. and Wides, R. 1999. Mapping homologs of *Drosophila* odd Oz (odz): DOC4/Odz4 to mouse chromosome 7, Odz1 to mouse chromosome 11; and ODZ3 to human chromosome Xq25. Genomics 58: 102-103.
4. Wang, X.Z., et al. 1999. γ-heregulin is the product of a chromosomal translocation fusing the DOC4 and HGL/NRG1 genes in the MDA-MB-175 breast cancer cell line. Oncogene 18: 5718-5721.
5. Oohashi, T., et al. 1999. Mouse ten-m/Odz is a new family of dimeric type II transmembrane proteins expressed in many tissues. J. Cell Biol. 145: 563-577.
6. Ben-Zur, T., et al. 2000. The mammalian Odz gene family: homologs of a *Drosophila* pair-rule gene with expression implying distinct yet overlapping developmental roles. Dev. Biol. 217: 107-120.

SOURCE

DOC4 (M-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of DOC4 of mouse 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-10970 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

DOC4 (M-17) is recommended for detection of DOC4 family members 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

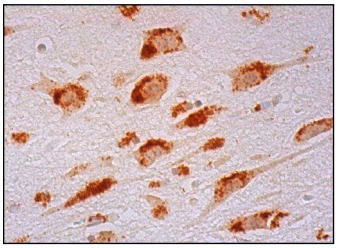
DOC4 (M-17) is also recommended for detection of DOC4 family members in additional species, including equine, canine, bovine, porcine and avian.

Suitable for use as control antibody for DOC4 siRNA (h): sc-40494, DOC4 siRNA (m): sc-40495, DOC4 shRNA Plasmid (h): sc-40494-SH, DOC4 shRNA Plasmid (m): sc-40495-SH, DOC4 shRNA (h) Lentiviral Particles: sc-40494-V and DOC4 shRNA (m) Lentiviral Particles: sc-40495-V.

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. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



DOC4 (M-17): sc-10970. Immunoperoxidase staining of formalin fixed, paraffin-embedded human hippocampus tissue showing cytoplasmic staining of neuronal cells and Glial cells.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.