

Elmo3 (E-17): sc-21696

BACKGROUND

Elmo (engulfment and cell motility) proteins share similarity to *C. elegans* CED-12. The *C. elegans* genes *ced-2*, *ced-5*, *ced-10*, and *ced-12* and their mammalian homologs CRKII, DOCK1, RAC1 and ELMO mediate cytoskeletal rearrangements during phagocytosis of apoptotic cells and cell motility. Elmo1 associates with DOCK 180 and may influence phagocytosis and effect cell shape changes. Src family kinase mediated tyrosine phosphorylation of ELMO1 influences signaling through Elmo1/Crk/DOCK 180 pathways. Elmo2 interacts directly with Rho G in a GTP-dependent manner and forms a ternary complex with DOCK 180 to induce activation of Rac 1. The RhoG-Elmo2-DOCK 180 pathway is required for activation of Rac 1 and cell spreading mediated by integrin, as well as for neurite outgrowth induced by nerve growth factor. Elmo3 acts in association with DOCK180 and Crk II and may be required in complex with DOCK180 to activate Rac/Rho small GTPases.

REFERENCES

- Gumienny, T.L., et al. 2001. CED-12/Elmo, a novel member of the Crk II/DOCK 180/Rac pathway, is required for phagocytosis and cell migration. *Cell* 107: 27-41.
- Brugnera, E., et al. 2002. Unconventional Rac-GEF activity is mediated through the DOCK 180-Elmo complex. *Nat. Cell Biol.* 4: 574-582.
- Katoh, H., et al. 2003. Rho G activates Rac 1 by direct interaction with the DOCK 180-binding protein Elmo. *Nature* 424: 461-464.
- Sanui, T., et al. 2003. DOCK2 regulates Rac activation and cytoskeletal reorganization through interaction with Elmo1. *Blood* 102: 2948-2950.
- Lu, M., et al. 2004. PH domain of Elmo functions in trans to regulate Rac activation via DOCK 180. *Nat. Struct. Mol. Biol.* 11: 756-762.
- deBakker, C.D., et al. 2004. Phagocytosis of apoptotic cells is regulated by a UNC-73/TRIO-MIG-2/Rho G signaling module and armadillo repeats of CED-12/Elmo. *Curr. Biol.* 14: 2208-2216.
- Yokoyama, N., et al. 2005. Identification of tyrosine residues on Elmo1 that are phosphorylated by the Src-family kinase Hck. *Biochemistry* 44: 8841-8849.
- Akakura, S., et al. 2005. C-terminal SH3 domain of Crk II regulates the assembly and function of the DOCK 180/Elmo Rac-GEF. *J. Cell. Physiol.* 204: 344-351.
- Santy, L.C., et al. 2005. The DOCK 180/Elmo complex couples ARNO-mediated Arf6 activation to the downstream activation of Rac 1. *Curr. Biol.* 15: 1749-1754.

CHROMOSOMAL LOCATION

Genetic locus: ELMO3 (human) mapping to 16q22.1.

SOURCE

Elmo3 (E-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Elmo3 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-21696 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Elmo3 (E-17) is recommended for detection of Elmo3 of 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).

Elmo3 (E-17) is also recommended for detection of Elmo3 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Elmo3 siRNA (h): sc-43750, Elmo3 shRNA Plasmid (h): sc-43750-SH and Elmo3 shRNA (h) Lentiviral Particles: sc-43750-V.

Molecular Weight of Elmo3: 81 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.