SANTA CRUZ BIOTECHNOLOGY, INC.

Ect2 (G-4): sc-514750

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Numerous cellular functions such as proliferation, differentiation, apoptosis, vesicular trafficking, nuclear transport and cytoskeletal organization are controlled by GTPases. It has become increasingly clear that GTPases act in cascades in which their activities are linked by GTPase-activating proteins (GAPs) and guanine nucleotide exchange factors (GEFs). In a search for new epithelial cell-specific oncogenes using a highly efficient cDNA expression cloning system, the ost oncogene was isolated from rat osteosarcoma cells. The Ost proto-oncogene protein contains DH and PH domains and catalyzes guanine nucleotide exchange on RhoA and Cdc42 and interacts specifically with the GTP-bound form of Rac1. A similar protein, Ect2, specifically interacts with Rho and Rac proteins *in vitro*. Ect2 shares sequence homology with the 255 amino acid central core of the breakpoint cluster gene, Bcr, as well as with yeast Cdc24 and the Dbl oncogene, all of which have been shown to modulate the function of small Rho-like GTP binding proteins. The Ect2 contains both PH and DH domains.

REFERENCES

1. Miki, T., et al. 1991. Development of a highly efficient expression cDNA cloning system: application to oncogene isolation. Proc. Natl. Acad. Sci. USA 88: 5167-5171.
2. Ron, D., et al. 1991. A region of proto-dbl essential for its transforming activity shows sequence similarity to a yeast cell cycle gene, Cdc24, and the human breakpoint cluster gene, Bcr. New Biol. 3: 372-379.

CHROMOSOMAL LOCATION

Genetic locus: ECT2 (human) mapping to 3q26.31; Ect2 (mouse) mapping to 3 A3.

SOURCE

Ect2 (G-4) is a mouse monoclonal antibody raised against amino acids 584-883 of Ect2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Ect2 (G-4) is available conjugated to agarose (sc-514750 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-514750 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-514750 PE), fluorescein (sc-514750 FITC), Alexa Fluor® 488 (sc-514750 AF488), Alexa Fluor® 546 (sc-514750 AF546), Alexa Fluor® 594 (sc-514750 AF594) or Alexa Fluor® 647 (sc-514750 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-514750 AF680) or Alexa Fluor® 790 (sc-514750 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

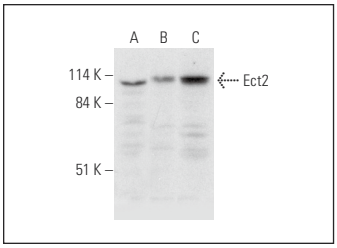
Ect2 (G-4) is recommended for detection of Ect2 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for Ect2 siRNA (h): sc-35259, Ect2 siRNA (m): sc-35260, Ect2 shRNA Plasmid (h): sc-35259-SH, Ect2 shRNA Plasmid (m): sc-35260-SH, Ect2 shRNA (h) Lentiviral Particles: sc-35259-V and Ect2 shRNA (m) Lentiviral Particles: sc-35260-V.

Molecular Weight of Ect2: 100 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, NIH/3T3 whole cell lysate: sc-2210 or 3T3-L1 cell lysate: sc-2243.

DATA



Ect2 (G-4): sc-514750. Western blot analysis of Ect2 expression in HeLa (**A**), NIH/3T3 (**B**) and 3T3-L1 (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Wu, C.G., et al. 2017. PP2A-B' holoenzyme substrate recognition, regulation and role in cytokinesis. Cell Discov. 3: 17027.
2. Velasco, M.X., et al. 2019. Antagonism between the RNA binding protein Musashi1 and miR-137 and its potential impact on neurogenesis and glioblastoma development. RNA 25: 768-782.
3. Hetmanski, J.H.R., et al. 2019. Membrane tension orchestrates rear retraction in matrix-directed cell migration. Dev. Cell 51: 460-475.e10.
4. Wang, J., et al. 2020. Skp2 depletion reduces tumor-initiating properties and promotes apoptosis in synovial sarcoma. Transl. Oncol. 13: 100809.
5. Schneid, S., et al. 2021. The BRCT domains of Ect2 have distinct functions during cytokinesis. Cell Rep. 34: 108805.
6. Law, R.A., et al. 2023. Cytokinesis machinery promotes cell dissociation from collectively migrating strands in confinement. Sci. Adv. 9: eabq6480.
7. Tran, A.T., et al. 2024. Cytoplasmic accumulation and plasma membrane association of anillin and Ect2 promote confined migration and invasion. Res. Sq. E-published.

RESEARCH USE

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