SANTA CRUZ BIOTECHNOLOGY, INC.

EDG-4 (C-16): sc-16082

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The EDG (endothelial differentiation gene) family of G protein-coupled receptors consists of eight family members that bind lysophospholipid (LPL) mediators, including sphingosine-1-phosphate (SPP) and lysophosphatidic acid (LPA). EDG-1, EDG-3, EDG-5 (also designated H218 and AGR16) and EDG-8 bind SPP with high-affinity. EDG-6 is a low-affinity receptor for SPP. LPA preferentially binds to EDG-2, EDG-4 and EDG-7. The EDG receptors couple to multiple G proteins to signal through Ras, MAP kinase, Rho, Phospholipase C or other tyrosine kinases, which lead to cell survival, growth, migration and differentiation. EDG-1 signals through G_i proteins to activate Akt and is expressed in glioma cells. EDG-2 is expressed in brain, especially in white matter tract regions, while EDG-3 is expressed in cardiovascular tissue and in cerebellum. EDG-4 is highly expressed on leukocytes and brain, and EDG-5 has wide tissue distribution, including cardiovascular tissue and brain. Expressed in lymphoid and hematopoietic tissues and in lung, EDG-6 signals through $G_{i/o}$ proteins, which activate growth related pathways.

REFERENCES

1. Goetzl, E.J., et al. 1999. A subfamily of G protein-coupled cellular receptors for lysophospholipids and lysosphingolipids. Adv. Exp. Med. Biol. 469: 259-264.
2. Van Brocklyn, J.R., et al. 2000. Sphingosine-1-phosphate is a ligand for the G protein-coupled receptor EDG-6. Blood 95: 2624-2629.
3. Sato, K., et al. 2000. Differential roles of EDG-1 and EDG-5, sphingosine 1-phosphate receptors, in the signaling pathways in C6 glioma cells. Brain Res. Mol. Brain Res. 85: 151-160.
4. Pyne, S., et al. 2000. Sphingosine 1-phosphate signalling in mammalian cells. Biochem. J. 349: 385-402.
5. Zheng, Y., et al. 2001. Lysophosphatidic acid receptor-selective effects on Jurkat T cell migration through a matrigel model basement membrane. J. Immunol. 166: 2317-2322.
6. Morales-Ruiz, M., et al. 2001. Sphingosine 1-phosphate activates Akt, nitric oxide production and chemotaxis through a G_i-protein/phosphoinositide 3-kinase pathway in endothelial cells. J. Biol. Chem. 276: 19672-19677.
7. Handford, E.J., et al. 2001. EDG-2 receptor distribution in adult rat brain. Neuroreport 12: 757-760.

CHROMOSOMAL LOCATION

Genetic locus: LPAR2 (human) mapping to 19p13.11; Lpar2 (mouse) mapping to 8 B3.3.

SOURCE

EDG-4 (C-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of EDG-4 of human origin.

STORAGE

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

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-16082 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

EDG-4 (C-16) is recommended for detection of EDG-4 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).

Suitable for use as control antibody for EDG-4 siRNA (h): sc-39926, EDG-4 siRNA (m): sc-39927, EDG-4 shRNA Plasmid (h): sc-39926-SH, EDG-4 shRNA Plasmid (m): sc-39927-SH, EDG-4 shRNA (h) Lentiviral Particles: sc-39926-V and EDG-4 shRNA (m) Lentiviral Particles: sc-39927-V.

Molecular Weight of EDG-4: 50 kDa.

Positive Controls: BT-20 cell lysate: sc-2223, MDA-MB-231 cell lysate: sc-2232 or ES-2 cell lysate: sc-24674.

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.

SELECT PRODUCT CITATIONS

1. Jin, Y., et al. 2003. Lysophosphatidic acid induces human natural killer cell chemotaxis and intracellular calcium mobilization. Eur. J. Immunol. 33: 2083-2089.
2. Matsumoto, N., et al. 2010. Pivotal role of actin depolymerization in the regulation of cochlear outer hair cell motility. Biophys. J. 99: 2067-2076.

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.