

EDG-1 (A-6): sc-48356

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. EDG-6, which is expressed in lymphoid and hematopoietic tissues and in lung, signals through G_{i/o} proteins, which activate growth related pathways.

CHROMOSOMAL LOCATION

Genetic locus: S1PR1 (human) mapping to 1p21.2.

SOURCE

EDG-1 (A-6) is a mouse monoclonal antibody raised against amino acids 322-381 of EDG-1 of human origin.

PRODUCT

Each vial contains 200 µg IgG₃ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

EDG-1 (A-6) is available conjugated to agarose (sc-48356 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-48356 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; and to either phycoerythrin (sc-48356 PE), fluorescein (sc-48356 FITC) or Alexa Fluor® 488 (sc-48356 AF488) or Alexa Fluor® 647 (sc-48356 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM.

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APPLICATIONS

EDG-1 (A-6) is recommended for detection of EDG-1 of 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), 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).

Suitable for use as control antibody for EDG-1 siRNA (h): sc-37086, EDG-1 shRNA Plasmid (h): sc-37086-SH and EDG-1 shRNA (h) Lentiviral Particles: sc-37086-V.

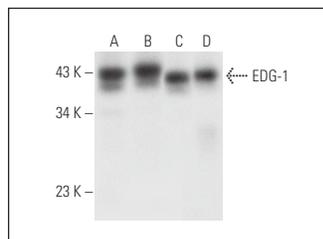
Molecular Weight of EDG-1: 38 kDa.

Positive Controls: human cerebellum extract: sc-516706, human cerebral cortex extract: sc-516707 or human hypothalamus extract: sc-516709.

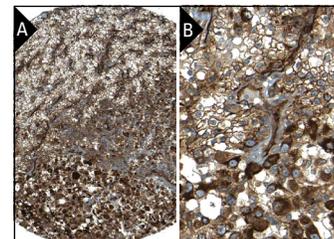
STORAGE

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

DATA



EDG-1 (A-6): sc-48356. Western blot analysis of EDG-1 expression in human hippocampus (A), human cerebral cortex (B), human hypothalamus (C) and human cerebellum (D) tissue extracts.



EDG-1 (A-6): sc-48356. Immunoperoxidase staining of formalin fixed, paraffin-embedded human renal cancer tissue showing membrane and cytoplasmic staining of tumor cells at low (A) and high (B) magnification. Kindly provided by The Swedish Human Protein Atlas (HPA) program.

SELECT PRODUCT CITATIONS

- Shannon, L.A., et al. 2012. CCR7/CCL19 controls expression of EDG-1 in T cells. *J. Biol. Chem.* 287: 11656-11664.
- Quint, K., et al. 2014. The role of sphingosine kinase isoforms and receptors S1P1, S1P2, S1P3, and S1P5 in primary, secondary, and recurrent glioblastomas. *Tumour Biol.* 35: 8979-8989.
- Lin, C.C., et al. 2015. Sphingosine-1-phosphate mediates ICAM-1-dependent monocyte adhesion through p38 MAPK and p42/p44 MAPK-dependent Akt activation. *PLoS ONE* 10: e0118473.
- Sun, X.J., et al. 2017. Sphingosine-1-phosphate and its receptors in anti-neutrophil cytoplasmic antibody-associated vasculitis. *Nephrol. Dial. Transplant.* 32: 1313-1322.
- Josipovic, I., et al. 2018. Long noncoding RNA LIPSR1 is required for S1P signaling and endothelial cell function. *J. Mol. Cell. Cardiol.* 116: 57-68.
- Balaji Ragunathrao, V.A., et al. 2019. Sphingosine-1-phosphate receptor 1 activity promotes tumor growth by amplifying VEGF-VEGFR2 angiogenic signaling. *Cell Rep.* 29: 3472-3487.e4.
- Yang, C.C., et al. 2020. Sphingosine 1-phosphate induces cyclooxygenase-2/prostaglandin E₂ expression via PKC α -dependent mitogen-activated protein kinases and NF κ B cascade in human cardiac fibroblasts. *Front. Pharmacol.* 11: 569802.
- Song, H., et al. 2021. Sphingosine kinase 2 is essential for remyelination following cuprizone intoxication. *Glia* 69: 2863-2881.
- Zhu, Z., et al. 2023. The S1P receptor 1 antagonist Ponesimod reduces TLR4-induced neuroinflammation and increases A β clearance in 5XFAD mice. *EBioMedicine* 94: 104713.

RESEARCH USE

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