EDG-2 (B-10): sc-515665

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: LPAR1 (human) mapping to 9q31.3; Lpar1 (mouse) mapping to 4 B3.

SOURCE

EDG-2 (B-10) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 186-207 within an extracellular domain of EDG-2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

EDG-2 (B-10) is available conjugated to agarose (sc-515665 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-515665 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515665 PE), fluorescein (sc-515665 FITC), Alexa Fluor® 488 (sc-515665 AF488), Alexa Fluor® 546 (sc-515665 AF546), Alexa Fluor® 594 (sc-515665 AF594) or Alexa Fluor® 647 (sc-515665 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515665 AF680) or Alexa Fluor® 790 (sc-515665 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-515665 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

Alexa Fluor® is a trademark of Molecular Probes, Inc., Oregon, USA

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 for detailed protocols and support products.

APPLICATIONS

EDG-2 (B-10) is recommended for detection of EDG-2 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), 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-2 siRNA (h): sc-43746, EDG-2 siRNA (m): sc-60093, EDG-2 shRNA Plasmid (h): sc-43746-SH, EDG-2 shRNA Plasmid (m): sc-60093-SH, EDG-2 shRNA (h) Lentiviral Particles: sc-43746-V and EDG-2 shRNA (m) Lentiviral Particles: sc-60093-V.
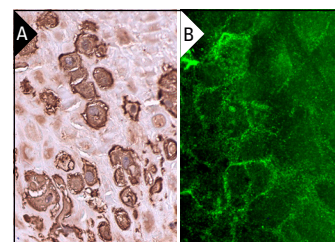
Molecular Weight of EDG-2: 41 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, A-10 cell lysate: sc-3806 or 3T3-L1 cell lysate: sc-2243.

DATA
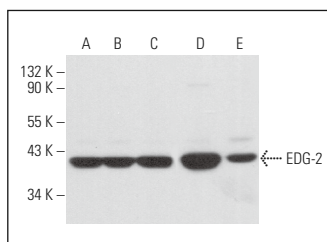
EDG-2 (B-10): sc-515665. Western blot analysis of EDG-2 expression in NIH/3T3 (**A**), 3T3-L1 (**B**), C3H/10T1/2 (**C**), A-10 (**D**) and BC$_3$H1 (**E**) whole cell lysates.

EDG-2 (B-10): sc-515665. Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing membrane and cytoplasmic staining of subset of decidual cells (**A**). Immunofluorescence staining of formalin-fixed A-431 cells showing membrane localization (**B**).

SELECT PRODUCT CITATIONS

1. Olianas, M.C., et al. 2016. LPA1 mediates antidepressant-induced ERK1/2 signaling and protection from oxidative stress in glial cells. J. Pharmacol. Exp. Ther. 359: 340-353.

2. Olianas, M.C., et al. 2017. LPA1 is a key mediator of intracellular signalling and neuroprotection triggered by tetracyclic antidepressants in hippocampal neurons. J. Neurochem. 143: 183-197.

3. Olianas, M.C., et al. 2019. Inhibition of TNF-α-induced neuronal apoptosis by antidepressants acting through the lysophosphatidic acid receptor LPA1. Apoptosis 24: 478-498.

4. Olianas, M.C., et al. 2020. Antidepressants induce profibrotic responses via the lysophosphatidic acid receptor LPA1. Eur. J. Pharmacol. 873: 172963.

5. Ray, R., et al. 2021. Atx regulates skeletal muscle regeneration via LPAR1 and promotes hypertrophy. Cell Rep. 34: 108809.

RESEARCH USE

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