

Product Information

Anti-Endothelial Cell Differentiation Gene 5, (EDG-5) C-TERMINAL

Developed in Rabbit, Fractionated Antisera

Product Number **E 7278**

Product Description

Anti-EDG-5 (Endothelial Cell Differentiation Gene-5) C-terminal antibody is developed in rabbit using a KLH (Keyhole Limpet Hemocyanin)-tagged synthetic peptide derived from the C-terminal region of human EDG-5 receptor as immunogen. The serum is purified by ammonium sulfate precipitation and then dialyzed to prevent exposure to extreme pH changes.

Anti-EDG-5 recognizes human recombinant and native EDG-5 receptor (42 kDa). It has been used in immunoblotting applications.

The lysosphingolipid sphingosine-1-phosphate (S1P) and the structurally related lipid lysophosphatidic acid (LPA) elicit a wide spectrum of biological responses in a variety of cell types, including calcium mobilization, mitogenesis, cell-shape changes, migration and contraction. S1P and LPA have been implicated in a variety of pathophysiological conditions, including blood clotting, subarachnoid hemorrhage, inflammation and colitis. S1P mediates some of its activities intracellularly by acting as a second messenger, while LPA may mediate mitogenesis and platelet aggregation via an EDG receptor-independent mechanism. LPA is also an anti-apoptotic factor.

Recent studies have identified the existence of the G protein-coupled heptahelical receptor subfamily (Endothelial Cell Differentiation Genes) for the biologically active lysophospholipids, which consists of two receptor subgroups specific for S1P and LPA, respectively. The S1P receptor subgroup comprises five members: EDG-1, -3, -5/AGR16, -6, and -8, with considerable amino acid similarity among them. The LPA subgroup includes EDG-2, -4, and -7.^{1,2} EDG receptors are developmentally regulated and differ in their tissue expression. The amino acid sequence similarity between EDG receptors reflects the similarity of S1P and LPA.

The 353-amino acid EDG-5 protein (MW ~42 kDa) is a human homolog of rat H218 that is a functional receptor for lysophospholipids. It shares approximately 44%

identity with the human S1P receptors EDG-1 and EDG-3. EDG-5 is expressed in cardiovascular and central nervous system tissues, and in all leukocyte-containing tissues. Functional analysis showed that EDG-5 and EDG-3 transduce, at least in part, S1P-induced cell proliferation, survival, and transcriptional activation.^{3,4} EDG-5 has also been found in human carcinoma cells and may be responsible for the stimulation of PLC-Ca²⁺ system in native glioma cells.

The availability of antibodies to EDG receptors will help to study biological implications of LPA and S1P signaling.

Reagent

Anti-EDG-5 is supplied as approximately 100 µg of antibody in 100 µl sterile phosphate buffered saline, pH 7.3, with 0.08% sodium azide as a preservative.

Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazards and safe handling practices.

Storage/Stability

Store at -20 °C. For extended storage, freeze in working aliquots. Avoid repeated freezing and thawing to prevent denaturing of the antibody. Do not store in a frost-free freezer. The antibody is stable for at least 12 months when stored appropriately.

Product Profile

A recommended working concentration of 1 to 10 µg/ml is determined by immunoblotting using RH7777 cells transfected with full length EDG-5. Data show the specificity of Anti-EDG-5 for the EDG-5 receptor protein (42 kDa). Preincubation of the antibody with the immunizing peptide blocks detection of EDG-5. For the detection of natural EDG-5 in cells and tissues, use higher concentrations of the antibody.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test

References

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3. An, S., et al., Sphingosine 1-phosphate-induced cell proliferation, survival, and related signaling events mediated by G protein-coupled receptors Edg3 and Edg5. *J. Biol. Chem.*, **275**, 288-296 (2000).
4. Goetzl, E.J. and An, S., Diversity of cellular receptors and functions for the lysophospholipid growth factors lysophosphatidic acid and sphingosine 1-phosphate. *FASEB J.*, **12**, 1589-1598 (1998).

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