



Product Information

S1P₂ C-Terminal Blocking Peptide Endothelial Cell Differentiation Gene 5, (EDG-5)

Product Number **E 8028**

Product Description

The EDG-5 C-terminal blocking peptide is a synthetic peptide (~2.5 kDa) derived from C-terminal domain of the full length EDG-5 (Endothelial Cell Differentiation Gene 5) receptor (~42 kDa). The peptide was used to immunize rabbits and raise Anti-EDG-5 antibody. It is also used as a blocking peptide in immunoblotting applications with Anti-EDG-5 antibody (Sigma Product Number E 7278). The preincubation of the Anti-EDG-5 with blocking peptide neutralizes the antibody and renders it inactive.

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. Recent studies have identified the existence of the G protein-coupled heptahelical receptor subfamily (Endothelial Cell Differentiation Genes), which consists of the two receptor subgroups specific for S1P and LPA, respectively. The S1P receptor subgroup comprises five members, i.e. 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}

The predicted 353-amino acid EDG-5 protein (~42 kDa) is a human homolog of rat H218, a functional receptor for lysophospholipids. EDG-5 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. 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. Functional analysis showed that EDG-5 and EDG-3 transduce, at least in part, S1P-induced cell proliferation, survival, and transcriptional activation.^{1,3}

Reagent

EDG-5, C-terminal is supplied as a solution of 50 µg of peptide in 50 µl phosphate buffered saline, pH 7.3.

Storage/Stability

Store at -20 °C. Upon initial thawing, for extended storage, freeze in working aliquots. Avoid repeated freezing and thawing to prevent denaturing of the peptide. The product is stable for at least 12 months when stored appropriately.

Procedure

Preincubate undiluted Anti-EDG-5 with EDG-5 peptide for 20 minutes at 37 °C. Use at least 50 fold stoichiometric excess of peptide. After the incubation dilute antibody according to protocol for Sigma Product Number E 7278 and perform immunoblotting using RH7777 cells transfected with full length EDG-5 receptor. Preincubation of the antibody with immunizing peptide abrogated EDG-5 detection, while preincubation with a non-specific peptide had no effect.

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

References

1. Kupperman, E., et al., A sphingosine-1-phosphate receptor regulates cell migration during vertebrate heart development. *Nature*, **406**, 192-195 (2000).
2. Takuwa, Y., et al., Subtype-specific, differential activities of the EDG family receptor sphingosine-1-phosphate, a novel lysophospholipid mediator. *Mol. Cell Endocrinol.*, **177**, 3-11 (2001).
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).

AH/JK 5/16/2004

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