

Product Information

LPA₁ C-Terminal Blocking Peptide Endothelial Cell Differentiation Gene 2, (EDG-2)

Product Number **E8653**

Product Description

The EDG-2, C-terminal blocking peptide is a synthetic (~2.5 kDa) peptide derived from C-terminal domain of the full length EDG-2 (Endothelial Cell Differentiation Gene 2) receptor (~18 kDa). The peptide was used to immunize rabbits and raise Anti-EDG-2 antibody. It is also used as a blocking peptide in immunoblotting application with Anti-EDG-2 antibody (Product Number E5017). The preincubation of the Anti-EDG-2 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}

EDG-2 is a high affinity receptor for lysophosphatidic acid (LPA). EDG-2 receptors transduce decreases in cAMP through Gi and increases in Ca²⁺ by augmenting phospholipase C and by induction of PI3 kinase, p125 FAK and phospholipase D. Human EDG-2 is expressed in high levels in oligodendrocytes and certain human malignant T cell lines. EDG-2 receptors may play a role in protecting cardiomyocytes from apoptosis induced by hypoxia and adrenergic stimulation.^{3,4}

Reagent

EDG-2, C-terminal is supplied as a solution in 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-2 with EDG-2 peptide for 20 minutes at 37 °C. Use at least 50 fold stoichiometric excess of peptide. After the incubation, dilute antibody and perform immunoblotting using RH7777 cells transfected with full length EDG-2 receptor. Preincubation of the antibody with immunizing peptide abrogated EDG-2 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. McAllister, G., et al., Edg2 receptor functionality: g1alpha1 coexpression and fusion protein studies., *Mol. Pharmacol.*, **58**, 407-412 (2000).
4. Hla, T., et al., Characterization of edg-2, a human homologue of the Xenopus maternal transcript G10 from endothelial cells. *Biochim. Biophys. Acta.*, **1260**, 227-229 (1995).

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