

## Product Information

### S1P<sub>1</sub> C-Terminal Blocking Peptide Endothelial Cell Differentiation Gene 1, (EDG-1)

Product Number **E 7903**

#### Product Description

The EDG-1 C-terminal blocking peptide is a synthetic (~2.5 kDa) peptide derived from C-terminal domain of the full length EDG-1 (Endothelial Cell Differentiation Gene 1) receptor (~44 kDa). The peptide was used to immunize rabbits and raise Anti-EDG-1 antibody. It is also used as a blocking peptide in immunoblotting application with Anti-EDG-1 antibody (Sigma Product Number E 7403). The preincubation of the Anti-EDG-1 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.<sup>1,2</sup>

EDG-1 is a 381 amino acid protein (42-44 kDa) expressed ubiquitously. EDG-1 binds S1P with high affinity and specificity. Overexpression of EDG-1-induced cell-cell aggregation, enhanced expression of cathedrins and formation of well-developed adherens junctions in a manner dependent on S1P and the small guanine nucleotide-binding protein Rho.<sup>3-5</sup>

#### Reagent

EDG-1, 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-1 with EDG-1 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 7403 and perform immunoblotting using RH7777 cells transfected with full length EDG-1 receptor. Preincubation of the antibody with immunizing peptide abrogated EDG-1 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).
4. Lee, M.J., et al., Sphingosine-1-phosphate as a ligand for the G protein-coupled receptor EDG-1. *Science*, **279**, 1552-1555 (1998).
5. Hobson, J.P., et al., Role of the sphingosine-1-phosphate receptor EDG-1 in PDGF-induced cell motility. *Science*, **291**, 1800-1803 (2001).

AH/JK 5/16/2004

Sigma brand products are sold through Sigma-Aldrich, Inc.

Sigma-Aldrich, Inc. warrants that its products conform to the information contained in this and other Sigma-Aldrich publications. Purchaser must determine the suitability of the product(s) for their particular use. Additional terms and conditions may apply. Please see reverse side of the invoice or packing slip.