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Product Information



S1P₁ Blocking Peptide

Item No. 10006616

Sphingosine-1-phosphate (S1P) exerts its activity by binding to five distinct G-protein-coupled receptors, S1P₁/EDG-1, S1P₂/EDG-5, S1P₃/EDG-3, S1P₄/EDG-6, and S1P₅/EDG-8.^{1,2} S1P₁ primarily couples with pertussis toxin-sensitive G_{i/o} proteins to mediate S1P-induced cell proliferation, survival, migration, cytoskeletal organization, and morphogenesis.¹⁻³ Expression of S1P₁ is abundant in embryological vasculature and ubiquitous in adult cells, suggesting diverse physiological functions of this receptor.² The human and murine S1P₁ have 382 amino acids with an estimated molecular weight of 43 kDa. Glycosylation at the N-terminal extracellular domain may cause the protein to migrate at higher position in SDS-PAGE.⁴ Cayman's S1P₁ polyclonal antibody detects the receptor at 47 kDa in western blot. The antibody can also be used in immunostaining to study expression patterns of this protein.

Laboratory Procedures

This vial contains 200 µg peptide lyophilized from water. The S1P₁ blocking peptide (Human S1P₁ amino acids 241-253) can be used in conjunction with Cayman's S1P₁ Polyclonal Antibody (Item No. 10005228) to block protein-antibody complex formation during immunochemical analysis of S1P₁.

Reconstitute the lyophilized peptide with 200 µl of PBS or distilled water. Store this peptide solution at -20°C. It will be stable for at least two years. To block antibody/protein complex formation, the following procedure is recommended:

1. Mix the S1P₁ Polyclonal Antibody (Item No. 10005228) and blocking peptide together in a 1:1 (v/v) ratio in a microfuge tube. For example, mix 20 µl of antibody and 20 µl of peptide.*
2. Incubate for 1 hour at room temperature with occasional mixing prior to further dilution and application of the mixture to the immunoblot.
3. Dilute the mixture to the final working antibody concentration and apply to the slide or membrane as usual.

*This is a recommended mixture. The minimum amount of peptide needed for complete blocking has not been precisely determined and may vary depending on the sample being analyzed. The amount of peptide required may need to be increased if sufficient blocking does not occur.

References

1. Takuwa, Y., Takuwa, N., and Sugimoto, N. The Edg family G protein-coupled receptors for lysophospholipids: Their signaling properties and biological activities. *J. Biochem.* **131**, 767-771 (2002).
2. Ishii, I., Fuckushima, N., Ye, X., *et al.* Lysophospholipid receptors: Signaling and biology. *Annu. Rev. Biochem.* **73**, 321-354 (2004).
3. Kluk, M.J. and Hla, T. Signaling of sphingosine-1-phosphate *via* the S1P/EDG-family of G-protein-coupled receptors. *Biochim. Biophys. Acta* **1582**, 72-80 (2002).
4. Kohno, T., Wada, A., and Igarashi, Y. N-glycans of sphingosine 1-phosphate receptor Edg-1 regulate ligand-induced receptor internalization. *FASEB J.* **16**, 983-992 (2002).

Related Product

S1P₁ Polyclonal Antibody - Item No. 10005228

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WARNING: THIS PRODUCT IS FOR LABORATORY RESEARCH ONLY. NOT FOR ADMINISTRATION TO HUMANS. NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

MATERIAL SAFETY DATA

This material should be considered hazardous until information to the contrary becomes available. Do not ingest, swallow, or inhale. Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. This information contains some, but not all, of the information required for the safe and proper use of this material. Before use, the user must review the complete Material Safety Data Sheet, which has been sent *via* email to your institution.

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