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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

mail@szabo-scandic.com

www.szabo-scandic.com

linkedin.com/company/szaboscandic

Product Information

$S1P_1$ Blocking Peptide

Item No. 10006616

Sphingosine-1-phosphate (S1P) exerts its activity by binding to five distinct G-protein-coupled receptors, $S1P_1$/EDG-1, $S1P_2$/EDG-5, $S1P_3$/EDG-3, $S1P_4$/EDG-6, and $S1P_5$/EDG-8.[1,2] $S1P_1$ 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 $S1P_1$ is abundant in embryological vasculature and ubiquitous in adult cells, suggesting diverse physiological functions of this receptor.[2] The human and murine $S1P_1$ 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 $S1P_1$ 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 $S1P_1$ blocking peptide (Human $S1P_1$ amino acids 241-253) can be used in conjunction with Cayman's $S1P_1$ Polyclonal Antibody (Item No. 10005228) to block protein-antibody complex formation during immunochemical analysis of $S1P_1$.

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 $S1P_1$ 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

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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

$S1P_1$ Polyclonal Antibody - Item No. 10005228

Cayman Chemical

Mailing address
1180 E. Ellsworth Road
Ann Arbor, MI
48108 USA

Phone
(800) 364-9897
(734) 971-3335

Fax
(734) 971-3640

E-Mail
custserv@caymanchem.com

Web
www.caymanchem.com