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Product Information



EP₂ Receptor Blocking Peptide

Item No. 301750

The biological effects of prostaglandin E₂ (PGE₂) are mediated through interaction with four distinct membrane-bound G protein-coupled EP receptors: EP₁, EP₂, EP₃, and EP₄.^{1,2} Binding of PGE₂ to the EP₂ receptor results in an increase in adenylate cyclase activity with a subsequent increase in cAMP.^{3,4} Pharmacologically, EP₂ receptors mediate relaxation of smooth muscle and are distinguished from EP₄ receptors by their sensitivity to the EP₂ receptor selective agonist butaprost.¹⁻³ The human EP₂ receptor is comprised of 358 amino acids with a molecular mass of approximately 40,000.³ A band at 53 kDa is detected in most samples by western blotting. mRNA for the EP₂ receptor is expressed in a variety of tissues including lung, placenta, spleen, intestine, kidney, and sensory neuron.³⁻⁵

Laboratory Procedures

This vial contains 200 µg of lyophilized peptide derived from the human EP₂ receptor sequence (C-terminal amino acids 335-358).³ This peptide was used as an antigen for production of the EP₂ receptor polyclonal antibody (Item No. 101750) and can be used in conjunction with this antibody to block protein-antibody complex formation during immunochemical analysis for the EP₂ receptor

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 EP₂ receptor Polyclonal Antibody (Item No. 101750) 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 one 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. Coleman, R.A., Smith, W.L., and Narumiya, S. Classification of prostanoid receptors: Properties, distribution, and structure of the receptors and their subtypes. *Pharmacol. Rev.* **46**, 205-229 (1994).
2. Coleman, R.A., Dahlén, S.-E., Drazen, J.M., *et al.* Classification of leukotriene receptors IUPHAR receptor compendium. *IUPHAR Compendium* 1-7 (1997).
3. Regan, J.W., Bailey, T.J., Pepperl, D.J., *et al.* Cloning of a novel human prostaglandin receptor with characteristics of the pharmacologically defined EP₂ subtype. *Mol. Pharmacol.* **46**, 213-220 (1994).
4. Nemoto, K., Pilbeam, C.C., Bilak, S.R., *et al.* Molecular cloning and expression of a rat prostaglandin E₂ receptor of the EP₂ subtype. *Prostaglandins* **54**, 713-725 (1997).
5. Southall, M.D. and Vasko, M.R. Prostaglandin receptor subtypes, EP_{3C} and EP₄, mediate the prostaglandin E₂-induced cAMP production and sensitization of sensory neurons. *J. Biol. Chem.* **276(19)**, 16083-16091 (2001).

Related Products

For a list of related products please visit: www.caymanchem.com/catalog/301750

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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