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# Product Information



## EP<sub>1</sub> Receptor Blocking Peptide

Item No. 301740

The biological effects of prostaglandin E<sub>2</sub> (PGE<sub>2</sub>) are mediated through interaction with four distinct membrane-bound G-protein coupled EP receptors: EP<sub>1</sub>, EP<sub>2</sub>, EP<sub>3</sub>, and EP<sub>4</sub>.<sup>1,2</sup> Binding of PGE<sub>2</sub> to the EP<sub>1</sub> receptor results in an increase in phosphatidyl inositol turnover with subsequent increase in intracellular free Ca<sup>2+</sup>.<sup>3,4</sup> Pharmacologically, EP<sub>1</sub> receptors mediate contraction of smooth muscle.<sup>1</sup> The human EP<sub>1</sub> receptor is comprised of 402 amino acids with a molecular mass of approximately 42,000.<sup>3</sup> The EP<sub>1</sub> receptor is expressed in a variety of tissues, including the kidney, lung, and sensory neuron.<sup>3-5</sup> Within the kidney, the EP<sub>1</sub> receptor is expressed at high levels in the cortical, outer medullary, and inner medullary collecting duct.

### Laboratory Procedures

This vial contains 200 µg of lyophilized peptide derived from the human EP<sub>1</sub> receptor sequence. The EP<sub>1</sub> receptor blocking peptide (C-terminal amino acids 380-402)<sup>3</sup> can be used in conjunction with Cayman's EP<sub>1</sub> receptor Polyclonal Antibody (Item No. 101740) to block protein-antibody complex formation during immunochemical analysis of EP<sub>1</sub> 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 EP<sub>1</sub> receptor Polyclonal Antibody (Item No. 101740) and blocking peptide together in a 1:1 (v/v) ratio in a microfuge tube. For example, mix XX µl of antibody and XX 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

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3. Funk, C.D., Furci, L., Fitzgerald, G.A., *et al.* Cloning and expression of a cDNA for the human prostaglandin E receptor EP<sub>1</sub> subtype. *J. Biol. Chem.* **268**, 26767-26772 (1993).
4. Watabe, A., Sugimoto, Y., Honda, A., *et al.* Cloning and expression of cDNA for a mouse EP<sub>1</sub> subtype of prostaglandin E receptor. *J. Biol. Chem.* **268**, 20175-20178 (1993).
5. Southall, M.D. and Vasko, M.R. Prostaglandin receptor subtypes, EP<sub>3C</sub> and EP<sub>4</sub>, mediate the prostaglandin E<sub>2</sub> -induced cAMP production and sensitization of sensory neurons. *J. Biol. Chem.* **276**(19), 16083-16091 (2001).
6. Breyer, M.D., Davis, L., Jacobson, H.R., *et al.* Differential localization of prostaglandin E receptor subtypes in human kidney. *Am. J. Physiol.* **270**, F912-F918 (1996).

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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

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