

## PGD<sub>2</sub> Receptor (DP<sub>1</sub>) Polyclonal Antibody

### Product Specifications

<b>Catalog Number:</b>	905-800-100								
<b>Host:</b>	Rabbit								
<b>Species Reactivity:</b>	Rat (predicted to react with mouse based on epitope sequence identity) Other species not tested								
<b>Applications:</b>	<b>WB:</b> Yes <b>Membrane ELISA*:</b> Yes  Other applications not tested. <i>The optimal dilution for a specific application must be determined by the investigator.</i> <i>*Under certain conditions, this antibody has been shown to display activation-state specificity. The dilution required to achieve activation-state specificity will vary, and should be optimized by the researcher<sup>9</sup>.</i>								
<b>Predicted M.W.:</b>	~40 kDa <sup>8</sup>								
<b>Concentration:</b>	See product label								
<b>Purification:</b>	Peptide Affinity								
<b>Format:</b>	PBS, 50% glycerol, 0.01% sodium azide								
<b>Storage:</b>	Store at -20°C <i>Shipping conditions may differ from the recommended storage temperature.</i>								
<b>Immunogen:</b>	Synthetic peptide derived from sequence near the amino-terminus of rat PGD <sub>2</sub> Receptor (DP <sub>1</sub> )								
<b>Related Products:</b>	<table border="0"> <tr> <td>SAB-300</td> <td>Goat anti-Rabbit IgG Polyclonal Antibody, HRP Conjugate</td> </tr> <tr> <td>905-047</td> <td>PGD<sub>2</sub> Polyclonal Antibody</td> </tr> <tr> <td>907-003</td> <td>COX Activity Kit</td> </tr> <tr> <td>900-094</td> <td>COX-II (human) EIA Kit</td> </tr> </table>	SAB-300	Goat anti-Rabbit IgG Polyclonal Antibody, HRP Conjugate	905-047	PGD <sub>2</sub> Polyclonal Antibody	907-003	COX Activity Kit	900-094	COX-II (human) EIA Kit
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### Background:

The conversion of arachidonic acid to prostaglandin H<sub>2</sub> (PGH<sub>2</sub>) by cyclooxygenase (COX) enzymes is the first step in the synthesis of prostanoids<sup>1</sup>. Prostaglandin D<sub>2</sub> (PGD<sub>2</sub>) is synthesized from PGH<sub>2</sub> by the action of PGD synthase, and its actions in vasodilation and platelet activation are mediated via activation of two identified G-protein coupled receptors (GPCRs): DP<sub>1</sub> and DP<sub>2</sub> (formerly CRTH<sub>2</sub>)<sup>2,3</sup>. Both DP<sub>1</sub> and DP<sub>2</sub> receptors are coupled to G<sub>s</sub> alpha subunits, resulting in increased adenylyl cyclase activity and cAMP production upon agonist binding<sup>1</sup>. DP<sub>1</sub> receptor is expressed moderately in the ileum and weakly in the lung, stomach, and uterus of mice, and weakly in the small intestine of humans<sup>2,3</sup>. In rodents, expression of PGD synthase and the DP<sub>1</sub> receptor is seen in the leptomeninges, where it is believed they play a role in the induction of sleep<sup>4-6</sup>. The DP<sub>1</sub> receptor may also oppose DP<sub>2</sub>-mediated activation of basophils, eosinophils, and Th2 cells<sup>7</sup>.

### References:

1. Narumiya, Shuh, *et al.* (1999) *Physiol Rev.* **79**, 1193-1226.
2. Hirata, M., *et al.* (1994) *Proc Natl Acad Sci USA* **91**, 11192-11196.
3. Boie, Y., *et al.* (1995) *J Biol Chem.* **270**, 18910-18916.
4. Urade, Y., *et al.* (1993) *Proc Natl Acad Sci USA* **90**, 9070-9074.
5. Scammell, T., *et al.* (1998) *Proc Natl Acad Sci USA* **95**, 7754-7759.
6. Matsumura, H., *et al.* (1994) *Proc Natl Acad Sci USA* **91**, 11998-12002.
7. Yoshimura-Uchiyama, C., *et al.* (2004) *Clin Exp Allergy* **34**, 1283-1290.
8. Pettipher, R., *et al.* (2007) *Nat Rev Drug Discov.* **6**, 313-325.
9. Gupta, A., *et al.* (2007) *J Biol Chem.* **282**, 5116-5124.



Visit the Scientific Resources section of our website for ELISA, IHC, and WB protocols.

Generally reagents are good for one year from the date of receipt, except for conjugates which are good for six months and reagents with an expiration date indicated on the label or other supporting document.

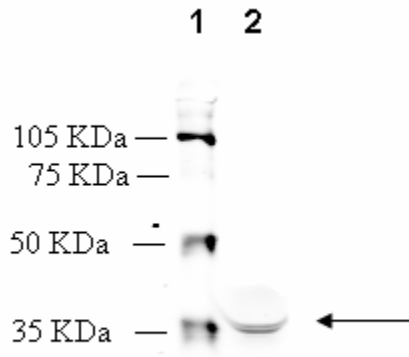
Assay Designs makes every effort to provide a consistent source of high quality polyclonal antibodies. However, due to variations inherent in this technology, investigators are urged to purchase sufficient quantities of a specific lot number if an identical antibody is required throughout a study.

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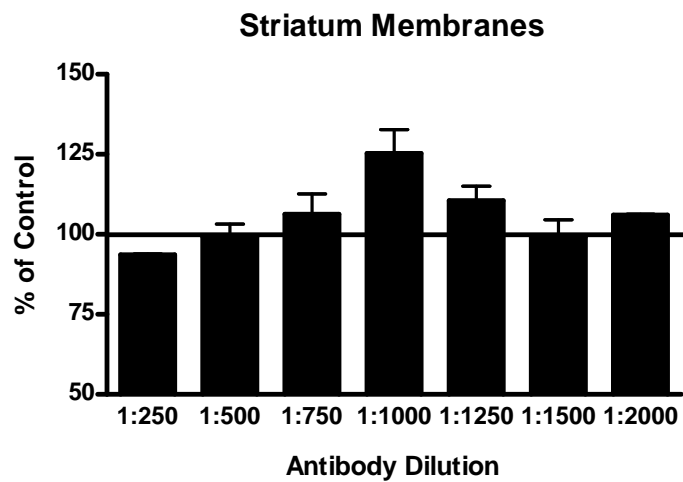
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**Western Blot Analysis:** MW marker (1) and 20 µg rat brain extract (2) probed with PGD<sub>2</sub> Receptor (DP<sub>1</sub>) Polyclonal Antibody at 4.9 µg/mL.



**Membrane ELISA:** Lewis rat striatum membranes (5 µg/well) were treated with 1 µM concentrations of agonist (PGD<sub>2</sub>/BW245C) and probed with PGD<sub>2</sub> Receptor (DP<sub>1</sub>) Polyclonal Antibody (1:250 to 1:2000 of a 1 µg/µL stock solution) by ELISA. Data from vehicle treated cells were taken as 100%. Results are the mean ± SEM (n=2).