

PRODUCT INFORMATION



Prostaglandin D Synthase (hematopoietic-type; mouse) Polyclonal Antiserum Item No. 10004348

Overview and Properties

Contents:	This vial contains 200 µl polyclonal antiserum with 0.02% sodium azide
Synonyms:	H-PGD synthase, H-PGDS
Immunogen:	Recombinant mouse H-PGDS
Species Reactivity:	(+) Human, mouse
Uniprot No.:	Q9JHF7
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	Lyophilized from serum, resuspend 200 µl double distilled water.
Host:	Rabbit
Applications:	Immunohistochemistry (IHC) and Western blot (WB); the recommended starting dilution for IHC is 1:500 and 1:200 for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Description

Prostaglandin D synthase (PGDS) is a glutathione-dependent enzyme and member of the sigma class of glutathione-S-transferases (GSTs) that catalyzes the conversion of PGH₂ (Item No. 17020) to PGD₂ (Item No. 12010), an eicosanoid that has numerous biological functions, including vasorelaxation, recruitment of inflammatory cells, and inhibition of platelet aggregation.¹⁻³ There are two types of PGDS: lipocalin PGDS (L-PGDS; Item Nos. 10006788 | 10006787 | 10010548) and hematopoietic PGDS (H-PGDS; Item Nos. 10006593 | 10004347).³ H-PGDS is found in peripheral tissues and immune cells, including Th2 cells, antigen-presenting cells, mast cells, megakaryocytes, and eosinophils, where it is localized to the cytosol.² H-PGDS activity is increased by a variety of stimuli, including LPS, anti-IgE antibodies, phorbol 12-myristate 13-acetate (TPA; Item No. 10008014), ionomycin (Item No. 10004974), and inflammatory cytokines such as IL-13, IL-3, or IL-4.³ siRNA silencing of *Hpgds* decreases LPS-induced production of PGD₂ in mouse bone marrow-derived macrophages (BMDMs).⁴ Transgenic overexpression of *HPGDS* in mice increases croton oil-induced ear swelling and PGD₂ production, and genome-wide deletion of *Hpgds* exacerbates hypotension and vascular permeability in a mouse model of anaphylaxis.^{5,6} H-PGDS protein levels are increased in the nasal mucosa of patients with allergic rhinitis, and *HPGDS* SNPs have been found in individuals with asthma.^{1,3} Cayman's Prostaglandin D Synthase (hematopoietic-type; mouse) Polyclonal Antiserum can be used for immunohistochemistry (IHC) and Western blot (WB) applications. The antibody recognizes H-PGDS at 23 kDa from human and mouse samples.

References

1. Tan, C., de Noronha, R.G., Roecker, A.J., *et al.* Identification of a novel small-molecule inhibitor of the hypoxia-inducible factor 1 pathway. *Cancer Res.* **65(2)**, 605-612 (2005).
2. Thurairatnam, S. Hematopoietic prostaglandin D synthase inhibitors. *Prog. Med. Chem.* **51**, 97-133 (2012).
3. Rittchen, S. and Heinemann, A. Therapeutic potential of hematopoietic prostaglandin D₂ synthase in allergic inflammation. *Cells* **8(6)**, 619 (2019).
4. Zhao, G., Yu, R., Deng, J., *et al.* Pivotal role of reactive oxygen species in differential regulation of lipopolysaccharide-induced prostaglandins production in macrophages. *Mol. Pharmacol.* **83(1)**, 167-178 (2013).
5. Sarashina, H., Tsubosaka, Y., Omori, K., *et al.* Opposing immunomodulatory roles of prostaglandin D₂ during the progression of skin inflammation. *J. Immunol.* **192(1)**, 459-465 (2014).
6. Nakamura, T., Fujiwara, Y., Yamada, R., *et al.* Mast cell-derived prostaglandin D₂ attenuates anaphylactic reactions in mice. *J. Allergy Clin. Immunol.* **140(2)**, 630-632 (2017).

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

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