PRODUCT INFORMATION

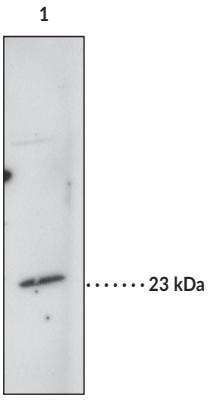
Prostaglandin D Synthase (hematopoietic) Polyclonal Antibody

Item No. 160013

Overview and Properties

Contents:	This vial contains 500 µl of peptide affinity-purified polyclonal antibody.
Synonyms:	H-PGD Synthase, H-PGDS
Immunogen:	Synthetic peptide from the N-terminal region of human H-PGDS
Cross Reactivity:	(+) H-PGDS
Species Reactivity:	(+) Human, baboon, mouse, rat; other species not tested
Uniprot No.:	O60760
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	PBS, pH 7.2, with 50% glycerol, 0.1% BSA, and 0.02% sodium azide
Host:	Rabbit
Application:	Western blot; the recommended starting dilution 1:200. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Image



Lane 1: Baboon myometrium (50 µg)

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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 PGH_2 (Item No. 17020) to PGD_2 (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 PGD_2 in mouse bone marrow-derived macrophages (BMDMs).[4] Transgenic overexpression of *HPGDS* in mice increases croton oil-induced ear swelling and PGD_2 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 Antibody can be used for Western blot (WB) applications. The antibody recognizes H-PGDS at 23 kDa from human, baboon, mouse, and rat samples.

References

1. Kanaoka, Y. and Urade, Y. Hematopoietic prostaglandin D synthase. *Prostaglandins Leukot. Essent. Fatty Acids* **69(2-3)**, 163-167 (2003).
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 D_2 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 D_2during 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 D_2 attenuates anaphylactic reactions in mice. *J. Allergy Clin. Immunol.* **140(2)**, 630-632 (2017).

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