

PRODUCT INFORMATION

Prostaglandin D Synthase (hematopoietic-type; mouse) Monoclonal Antibody

Item No. 10004349

Overview and Properties

Contents:	This vial contains 100 µg of affinity-purified monoclonal antibody.
Synonyms:	H-PGDS, H-PGD Synthase
Immunogen:	Purified recombinant mouse H-PGDS
Species Reactivity:	(+) Human, mouse
Uniprot No.:	Q9JHF7
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥3 years
Storage Buffer:	PBS, pH 7.2, with 50% glycerol, 0.1% BSA, and 0.02% sodium azide
Host:	Rat
Isotype:	IgG1
Applications:	Immunohistochemistry (IHC) and Western blot (WB); the recommended starting dilution 1:1,000. 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 No. 10006788) 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.^{1,7} Cayman's Prostaglandin D Synthase (hematopoietic-type; mouse) Monoclonal Antibody 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. Kanaoka, Y. and Urade, Y. *Prostaglandins Leukot. Essent. Fatty Acids* **69**(2-3), 163-167 (2003).
2. Thurairatnam, S. *Prog. Med. Chem.* **51**, 97-133 (2012).
3. Rittchen, S. and Heinemann, A. *Cell* **90**(6), 1085-1095 (1997).
4. Zhao, G., Yu, R., Deng, J., *et al. Mol. Pharmacol.* **83**(1), 167-178 (2013).
5. Sarashina, H., Tsubosaka, Y., Omori, K., *et al. J. Immunol.* **192**(1), 459-465 (2014).
6. Nakamura, T., Fujiwara, Y., Yamada, R., *et al. J. Allergy Clin. Immunol.* **140**(2), 630-632 (2017).
7. Rittchen, S. and Heinemann, A. *Cells* **8**(6), 619 (2019).

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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