

PRODUCT INFORMATION



Prostaglandin D Synthase (hematopoietic-type; human, recombinant)

Item No. 10006593

Overview and Properties

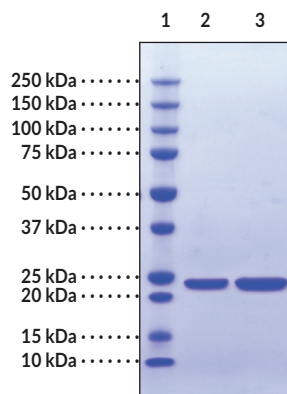
Synonyms: H-PGDS, hH-PGDS, Hematopoietic-PGDS, PGD Synthase (hematopoietic-type; human recombinant)
Source: Active recombinant N-terminal hexahistidine-tagged protein expressed in *E. coli*
Molecular Weight: 24.3 kDa/subunit
Storage: -80°C (as supplied)
Stability: ≥1 year
Purity: *batch specific* (≥95% estimated by SDS-PAGE)
Supplied in: 50 mM sodium phosphate, pH 7.2, containing 20% glycerol, 100 mM sodium chloride, 1 mM DTT, and 0.5 mM EDTA

Protein

Concentration: *batch specific* mg/ml
Specific Activity: *batch specific* U/mg
Unit Definition: One unit of enzyme produces 1 μmole of PGD₂ per minute at 25°C in 100 mM Tris-HCl, pH 8.0, 1 mM GSH, 1 mM magnesium chloride and 40 μM PGH₂.

Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Image



Lane 1: MW Markers
Lane 2: hH-PGDS (2 μg)
Lane 3: hH-PGDS (4 μg)

Representative gel image shown; actual purity may vary between each batch.

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.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

Prostaglandin D synthase (PGDS) catalyzes the isomerization of PGH₂ to produce PGD₂. PGD₂ induces sleep, regulates nociception, inhibits platelet aggregation, and acts as an allergic mediator. Two distinct types of PGD synthase have been identified, namely the lipocalin-type enzyme (β-trace) and the hematopoietic enzyme.¹⁻⁴ Hematopoietic PGDS (H-PGDS) is widely distributed in the peripheral tissues and is localized in the antigen-presenting cells, mast cells, and megakaryocytes. PGD₂ is produced by H-PGDS in large quantities by allergen-stimulated mast cells and acts as a pro-inflammatory mediator in allergic reactions. H-PGDS requires glutathione for activity, belongs to the sigma-class of glutathione-S-transferases, and is 24.3 kDa in size.^{1,4,5}

The activity of hematopoietic PGD synthase was quantitated using Cayman Chemical's PGD₂ ELISA Monoclonal Kit (Item No. 512031).

References

1. Kanaoka, Y., Fujimori, K., Kikuno, R., *et al.* Structure and chromosomal localization of human and mouse genes for hematopoietic prostaglandin D synthase. *Eur. J. Biochem.* **267**, 3315-3322 (2000).
2. Jowsey, I.R., Thomson, A.M., Flanagan, J.U., *et al.* Mammalian class sigma glutathione s-transferases: catalytic properties and tissue-specific expression of human and rat GSH-dependent prostaglandin D₂ synthases. *Biochem. J.* **359**, 507-516 (2001).
3. Urade, Y., Watanabe, K., and Hayaishi, O. Prostaglandin D, E, and F synthases. *J. Lipid Mediat. Cell Signal.* **12**, 257-273 (1995).
4. Kanaoka, Y., Ago, H., Inagaki, E., *et al.* Cloning and crystal structure of hematopoietic prostaglandin D synthase. *Cell* **90**, 1085-1095 (1997).
5. Urade, Y., Fujimoto, N., Ujihara, M., *et al.* Biochemical and immunological characterization of rat spleen prostaglandin D synthetase. *J. Biol. Chem.* **262**(8), 3820-3825 (1987).

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