

Product Information



Prostaglandin D Synthase (lipocalin-type; human recombinant)

Catalog No. 10006788

Synonyms:	Lipocalin-PGDS, β -Trace L-PGDS
Source:	Recombinant enzyme, purified from an <i>E. coli</i> overexpression system
M_r:	46 kDa/subunit
MF:	Homodimer
Purity:	≥95%
Stability:	≥6 months at -80°C
Supplied as:	A solution in 50 mM sodium phosphate, pH 7.2, containing 20% glycerol, 150 mM sodium chloride, 1 mM DTT, and 0.5 mM EDTA
Specific activity:	2.2 units/mg
Protein concentration:	0.5 mg/ml
Unit definition:	One unit of enzyme produces 1 μ mole of PGD ₂ per minute at 25°C in 100 mM Tris-HCl buffer, pH 8.0, containing 1 mM GSH, 1 mg/ml γ -globulin, and 40 μ M PGH ₂ .

Laboratory Procedures

Prostaglandin D synthase (PGDS) is stable for at least six months when stored at -80°C. In the event that only a portion of the enzyme is to be used in a single experiment, it is recommended that the enzyme be aliquoted into smaller sizes and frozen at -80°C. The activity of L-PGDS was measured using Cayman Chemical's PGD₂ EIA Kit (Catalog No. 512021).

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 PGDS have been identified, namely the lipocalin-type enzyme and the hematopoietic enzyme.¹⁻³ L-PGDS is localized in the central nervous system and male genital organs of various mammals and the human heart. This enzyme has been identified as β -trace, which is a major protein in human cerebrospinal fluid.¹

The human recombinant L-PGDS was expressed and purified from *E. coli* as a 46 kDa glutathione S-transferase (GST)-fusion protein. To avoid incorrectly folded protein due to wrong disulfide (S-S) linking, cysteines 89, 167, and 186 have been mutated to alanines in this enzyme. Alanine mutations or GST fusion does not alter the activity of the enzyme compared to wild-type.^{4,5}

References

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- Urade, Y. and Eguchi, N. *Prostaglandins and Other Lipid Mediators* **68-69**, 375-382 (2002).
- Urade, Y., Tanaka, T., Eguchi, N., et al. *J. Biol. Chem.* **270**, 1422-1428 (1995).
- Irikura, D., Kumasaka, T., Yamamoto, M., et al. *J. Biochem.* **133**, 29-32 (2003).

Related Products

HQL-79 - Cat. No. 10134 • Prostaglandin D₂ - Cat. No. 12010 • Prostaglandin H₂ - Cat. No. 17020 • Prostaglandin D Synthase (lipocalin-type) Polyclonal Antibody - Cat. No. 160003 • Prostaglandin D Synthase (hematopoietic-type) Polyclonal Antibody - Cat. No. 160013 • Prostaglandin D₂-MOX Express EIA Kit - Cat. No. 500151 • Prostaglandin D₂ FPIA Kit - Green - Cat. No. 500581 • Prostaglandin D₂-MOX EIA Kit - Cat. No. 512011 • Prostaglandin D Synthase (hematopoietic-type; human) Polyclonal Antibody - Cat. No. 10004337 • Prostaglandin D Synthase (lipocalin-type; human) Monoclonal Antibody - Cat. No. 10004342 • Prostaglandin D Synthase (lipocalin-type; murine) Polyclonal Antibody - Cat. No. 10004344 • Prostaglandin D Synthase (hematopoietic-type; human) Monoclonal Antibody - Cat. No. 10004345 • Prostaglandin D Synthase (hematopoietic-type; murine) Polyclonal Antibody - Cat. No. 10004348 • Prostaglandin D Synthase (hematopoietic-type; murine) Monoclonal Antibody - Cat. No. 10004349 • Prostaglandin D Synthase (hematopoietic-type; human recombinant) - Cat. No. 10006593 • Prostaglandin D Synthase (lipocalin-type; murine recombinant) - Cat. No. 10006787

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