

# PGD synthase (D-17): sc-14816

## BACKGROUND

Human PGD synthase is the key enzyme for production of the D and J series of prostanoids in the immune system and mast cells. This enzyme is the first member of the  $\alpha$  class glutathione S-transferases (GST) from vertebrates and contains a prominent cleft as the active site, which is unique among members of the GST superfamily. The human PGD synthase gene, which maps to chromosome 4q22.3, is expressed in a species-specific manner. For instance, the human gene is widely distributed, whereas the mouse gene is only expressed in oviduct and skin. Human PGD synthase is expressed in the cytoplasm of human megakaryoblastic CMK cells prior to differentiation into platelets, which have no PGD synthase activity. Another member of the PGD synthase family, PGD2 synthase, catalyzes the conversion of PGH<sub>2</sub> to PGD<sub>2</sub> and is essential for the synthesis of PGD<sub>2</sub> in the brain. Unlike PGD synthase, PGD<sub>2</sub> synthase is not dependent on the presence of glutathione for its activity. The human PGD<sub>2</sub> synthase gene maps to chromosome 9q34.3.

## REFERENCES

1. Nagata, A., et al. 1991. Human brain prostaglandin D synthase has been evolutionarily differentiated from lipophilic-ligand carrier proteins. *Proc. Natl. Acad. Sci. USA* 88: 4020-4024.
2. Mahmud, I., et al. 1997. Prostaglandin D synthase in human megakaryoblastic cells. *J. Biol. Chem.* 272: 28263-28266.
3. Kanaoka, Y., et al. 1997. Cloning and crystal structure of hematopoietic prostaglandin D synthase. *Cell* 90: 1085-1095.

## CHROMOSOMAL LOCATION

Genetic locus: HPGDS (human) mapping to 4q22.3; Hpgds (mouse) mapping to 6 C1.

## SOURCE

PGD synthase (D-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of PGD synthase of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-14816 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.

## APPLICATIONS

PGD synthase (D-17) is recommended for detection of PGD synthase of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

PGD synthase (D-17) is also recommended for detection of PGD synthase in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for PGD synthase siRNA (h): sc-41638, PGD siRNA (m): sc-152188, PGD synthase shRNA Plasmid (h): sc-41638-SH, PGD shRNA Plasmid (m): sc-152188-SH, PGD synthase shRNA (h) Lentiviral Particles: sc-41638-V and PGD shRNA (m) Lentiviral Particles: sc-152188-V.

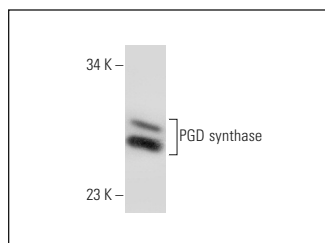
Molecular Weight of PGD synthase: 21 kDa.

Positive Controls: NCI-H460 whole cell lysate: sc-364235 or human fetal spleen tissue extract.

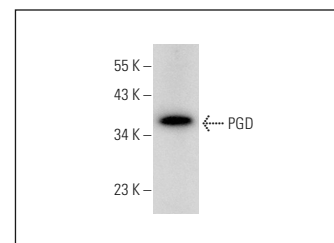
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



PGD synthase (D-17): sc-14816. Western blot analysis of PGD synthase expression in NCI-H460 whole cell lysate.



PGD synthase (D-17): sc-14816. Western blot analysis of PGD synthase expression in human fetal spleen tissue extract.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.