

# PGD2 synthase (F-24): sc-133904

## BACKGROUND

Human PGD synthase is the key enzyme for production of the D and J series of prostanooids 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 PGH2 to PGD2 and is essential for the synthesis of PGD2 in the brain. Unlike PGD synthase, PGD2 synthase is not dependent on the presence of glutathione for its activity. The human PGD2 synthase gene maps to chromosome 9q34.3.

## REFERENCES

1. Nagata, A., Suzuki, Y., Igarashi, M., Eguchi, N., Toh, H., Urade, Y. and Hayaishi, O. 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., Ueda, N., Yamaguchi, H., Yamashita, R., Yamamoto, S., Kanaoka, Y., Urade, Y. and Hayaishi, O. 1997. Prostaglandin D synthase in human megakaryoblastic cells. *J. Biol. Chem.* 272: 28263-28266.
3. Kanaoka, Y., Ago, H., Inagaki, E., Nanayama, T., Miyano, M., Kikuno, R., Fujii, Y., Eguchi, N., Toh, H., Urade, Y. and Hayaishi, O. 1997. Cloning and crystal structure of hematopoietic prostaglandin D synthase. *Cell* 90: 1085-1095.
4. Kanaoka, Y., Fujimori, K., Kikuno, R., Sakaguchi, Y., Urade, Y. and Hayaishi, O. 2000. Structure and chromosomal localization of human and mouse genes for hematopoietic prostaglandin D synthase. Conservation of the ancestral genomic structure of s-class glutathione S-transferase. *Eur. J. Biochem.* 267: 3315-3322.
5. LocusLink Report (LocusID: 5730) <http://www.ncbi.nlm.nih.gov/LocusLink/>

## CHROMOSOMAL LOCATION

Genetic locus: PTGDS (human) mapping to 9q34.3.

## SOURCE

PGD2 synthase (F-24) is an affinity purified rabbit polyclonal antibody raised against synthetic PGD2 synthase peptide of human origin.

## PRODUCT

Each vial contains 50  $\mu$ g IgG in 500  $\mu$ l PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

## STORAGE

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

## APPLICATIONS

PGD2 synthase (F-24) is recommended for detection of PGD2 synthase of 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), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for PGD2 synthase siRNA (h): sc-41640, PGD2 synthase shRNA Plasmid (h): sc-41640-SH and PGD2 synthase shRNA (h) Lentiviral Particles: sc-41640-V.

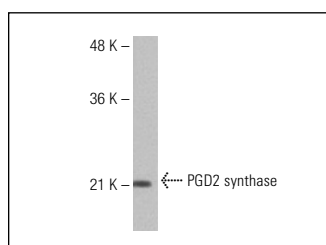
Molecular Weight of PGD2 synthase: 21 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227 or human kidney tissue.

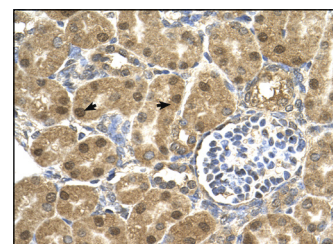
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

## DATA



PGD2 synthase (F-24): sc-133904. Western blot analysis of PGD2 synthase expression in Hep G2 whole cell lysate.



PGD2 synthase (F-24): sc-133904. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human kidney tissue showing nuclear and cytoplasmic localization.

## RESEARCH USE

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

## PROTOCOLS

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