

PGD2 synthase (N-20): sc-14821

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 sigma 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 4q22.1-q23, 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., 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.
4. Kanaoka, Y., et al. 2000. Structure and chromosomal localization of human and mouse genes for hematopoietic prostaglandin D synthase. Conservation of the ancestral genomic structure of sigma-class glutathione S-transferase. *Eur. J. Biochem.* 267: 3315-3322.
5. Locus Link (LocusID: 27306) <http://www.ncbi.nlm.nih.gov/LocusLink/>

CHROMOSOMAL LOCATION

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

SOURCE

PGD₂ synthase (N-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of PGD₂ synthase of human origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-14821 P, (100 µg 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.

APPLICATIONS

PGD₂ synthase (N-20) is recommended for detection of PGD₂ synthase of human and, to a lesser extent, mouse and rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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).

Suitable for use as control antibody for PGD₂ synthase siRNA (h): sc-41640, PGD₂ synthase siRNA (m): sc-41641, PGD₂ synthase shRNA Plasmid (h): sc-41640-SH, PGD₂ synthase shRNA Plasmid (m): sc-41641-SH, PGD₂ synthase shRNA (h) Lentiviral Particles: sc-41640-V and PGD₂ synthase shRNA (m) Lentiviral Particles: sc-41641-V.

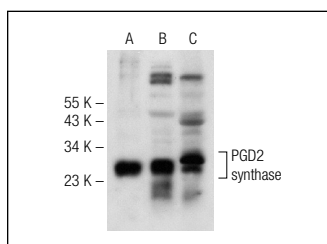
Molecular Weight of PGD₂ synthase: 21 kDa.

Positive Controls: mouse heart extract: sc-2254 or mouse brain extract: sc-2253 or human brain 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



PGD₂ synthase (N-20): sc-14821. Western blot analysis of PGD₂ synthase expression in human brain (A), mouse brain (B) and mouse heart (C) tissue extracts.

RESEARCH USE

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

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Try **PGD₂ synthase (C-8): sc-514866** or **PGD₂ synthase (F-7): sc-390717**, our highly recommended monoclonal alternatives to PGD₂ synthase (N-20).