SANTA CRUZ BIOTECHNOLOGY, INC.

PGD2 synthase (G-5): sc-393865

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 4q22.3, 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: 27306). http://www.ncbi.nlm.nih.gov/LocusLink/

CHROMOSOMAL LOCATION

Genetic locus: Ptgds (mouse) mapping to 2 A3.

SOURCE

PGD2 synthase (G-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 20-47 near the N-terminus of PGD2 synthase of mouse origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-393865 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

APPLICATIONS

PGD2 synthase (G-5) is recommended for detection of PGD2 synthase of mouse and rat origin by Western Blotting (starting dilution 1:100, 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 (m): sc-41641, PGD2 synthase shRNA Plasmid (m): sc-41641-SH and PGD2 synthase shRNA (m) Lentiviral Particles: sc-41641-V.

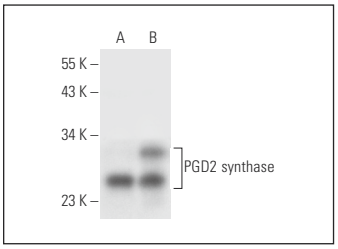
Molecular Weight of PGD2 synthase: 21 kDa.

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

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



PGD2 synthase (G-5): sc-393865. Western blot analysis of PGD2 synthase expression in mouse brain (**A**) and mouse heart (**B**) tissue extracts.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.