SANTA CRUZ BIOTECHNOLOGY, INC.

PBGS (S-14): sc-50779

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

PGBS (porphobilinogen synthase), an enzyme that belongs to the ALADH family, is composed of eight identical subunits and catalyzes the condensation of two molecules of δ-aminolevulinate to form porphobilinogen, a precursor of heme, cytochromes and other hemoproteins. It also catalyzes the second step in the porphyrin and heme biosynthetic pathway in which zinc is essential for enzymatic activity. PGBS is inhibited by lead. A defect in the gene encoding PGBS, ALAD, can cause increased sensitivity to lead poisoning and acute hepatic porphyria, a group of inherited disorders caused by partial enzyme defects in heme biosynthesis, which includes acute intermittent porphyria, variegate porphyria and hereditary coproporphyria. There are two common alleles of ALAD, ALAD*2 and ALAD*1. When exposed to environmental lead, individuals heterozygous or homozygous for ALAD*2 Asn 59 have significantly higher blood lead levels than do ALAD*1 Lys 59 homozygotes.

REFERENCES

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3. Hernandez, A.F., et al. 2005. Changes in erythrocyte enzymes in humans long-term exposed to pesticides: influence of several markers of individual susceptibility. Toxicol. Lett. 159: 13-21.
4. Aisemberg, J., et al. 2005. Comparative study on two freshwater invertebrates for monitoring environmental lead exposure. Toxicology 210: 45-53.
5. Lee, M.K., et al. 2005. Du-zhong (*Eucommia ulmoides* Oliv.) cortex water extract alters heme biosynthesis and erythrocyte antioxidant defense system in lead-administered rats. J. Med. Food 8: 86-92.
6. Roza, T., et al. 2005. 2,3-Dimercapto-1-propanol does not alter the porphobilinogen synthase inhibition but decreases the mercury content in liver and kidney of suckling rats exposed to HgCl2. Basic Clin. Pharmacol. Toxicol. 96: 302-308.
7. Sawada, N., et al. 2005. The activation mechanism of human porphobilinogen synthase by 2-mercaptoethanol: intrasubunit transfer of a reserve zinc ion and coordination with three cysteines in the active center. J. Biol. Inorg. Chem. 10: 199-207.
8. Farina, M., et al. 2005. Hematological changes in rats chronically exposed to oral aluminum. Toxicology 209: 29-37.

CHROMOSOMAL LOCATION

Genetic locus: ALAD (human) mapping to 9q32; Alad (mouse) mapping to 4 B3.

SOURCE

PBGS (S-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of PBGS 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-50779 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

PBGS (S-14) is recommended for detection of PBGS of mouse, rat and human 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).

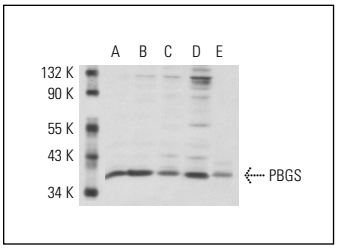
PBGS (S-14) is also recommended for detection of PBGS in additional species, including canine and bovine.

Suitable for use as control antibody for PBGS siRNA (h): sc-61385, PBGS siRNA (m): sc-61386, PBGS shRNA Plasmid (h): sc-61385-SH, PBGS shRNA Plasmid (m): sc-61386-SH, PBGS shRNA (h) Lentiviral Particles: sc-61385-V and PBGS shRNA (m) Lentiviral Particles: sc-61386-V.

Molecular Weight of PBGS: 37-39 kDa.

Positive Controls: HEL 92.1.7 cell lysate: sc-2270, TF-1 cell lysate: sc-2412 or Hep G2 cell lysate: sc-2227.

DATA



PBGS (S-14): sc-50779. Western blot analysis of Porphobilinogen synthase expression in HEL 92.1.7 (**A**), TF-1 (**B**), Hep G2 (**C**) and K-562 (**D**) whole cell lysates and mouse liver tissue extract (**E**).

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 or our catalog for detailed protocols and support products.