

# PBGS(K-16): sc-50776

## BACKGROUND

PBGS (porphobilinogen synthase), an enzyme that belongs to the ALADH family, is composed of eight identical subunits and catalyzes the condensation of two molecules of  $\delta$ -aminolevulinic acid 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. PBGS is inhibited by lead. A defect in the gene encoding PBGS, 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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- Aisemberg, J., et al. 2005. Comparative study on two freshwater invertebrates for monitoring environmental lead exposure. *Toxicology* 210: 45-53.
- 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.
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- 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.
- 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(K-16) 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  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-50776 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

PBGS(K-16) 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  $\mu$ 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).

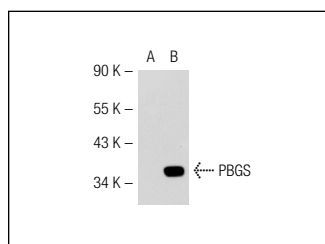
PBGS (K-16) is also recommended for detection of PBGS in additional species, including equine, canine and bovine.

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.

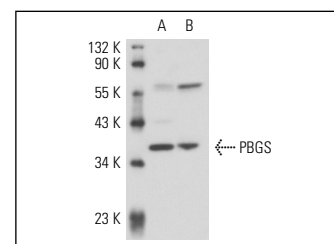
Molecular Weight of PBGS: 37-39 kDa.

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 (K-16): sc-50776. Western blot analysis of PBGS expression in non-transfected: sc-117752 (A) and mouse PBGS transfected: sc-125787 (B) 293T whole cell lysates.



PBGS (K-16): sc-50776. Western blot analysis of Porphobilinogen synthase expression in mouse liver (A) and rat liver (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](http://www.scbt.com) or our catalog for detailed protocols and support products.