

# G6Pase- $\beta$ (V-13): sc-167939

## BACKGROUND

Glucose-6-phosphatase (G6Pase), is a multicomponent enzyme system that hydrolyzes glucose-6-phosphate (G6P) in the final step of gluconeogenesis and gluconeolysis. G6Pase localizes to the endoplasmic reticulum, and while liver, kidney, and intestine are the only tissues that express the first identified isoform, G6Pase- $\alpha$ , a second form, designated G6Pase- $\beta$ , contributes to blood glucose homeostasis in a wider range of tissues. G6Pase- $\beta$ , also known as SCN4, UGRP or G6PC3 (glucose 6 phosphatase, catalytic, 3), is a 346 amino acid endoplasmic reticulum multi-pass membrane protein that is involved in carbohydrate biosynthesis and the gluconeogenesis pathway. Inhibited by vanadate, G6Pase- $\beta$  hydrolyzes G6P to glucose in the endoplasmic reticulum. Due to its necessary involvement in normal glucose metabolism, G6Pase- $\beta$  may play an integral role in diabetes and glycogen storage diseases (GSDs).

## REFERENCES

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- Guionie, O., et al. 2003. Identification and characterisation of a new human glucose-6-phosphatase isoform. *FEBS Lett.* 551: 159-164.
- Thiel, G., et al. 2005. cAMP response element binding protein (CREB) activates transcription via two distinct genetic elements of the human glucose-6-phosphatase gene. *BMC Mol. Biol.* 6: 2.
- Goh, B.H., et al. 2006. Expression of glucose-6-phosphatase system genes in murine cortex and hypothalamus. *Horm. Metab. Res.* 38: 1-7.
- Wang, Y., et al. 2006. Deletion of the gene encoding the ubiquitously expressed glucose-6-phosphatase catalytic subunit-related protein (UGRP)/glucose-6-phosphatase catalytic subunit- $\beta$  results in lowered plasma cholesterol and elevated glucagon. *J. Biol. Chem.* 281: 39982-39989.
- Cheung, Y.Y., et al. 2007. Impaired neutrophil activity and increased susceptibility to bacterial infection in mice lacking glucose-6-phosphatase- $\beta$ . *J. Clin. Invest.* 117: 784-793.

## CHROMOSOMAL LOCATION

Genetic locus: G6PC3 (human) mapping to 17q21.31; G6pc3 (mouse) mapping to 11 D.

## SOURCE

G6Pase- $\beta$  (V-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of G6Pase- $\beta$  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-167939 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## APPLICATIONS

G6Pase- $\beta$  (V-13) is recommended for detection of G6Pase- $\beta$  of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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); non cross-reactive with G6Pase- $\alpha$ .

G6Pase- $\beta$  (V-13) is also recommended for detection of G6Pase- $\beta$  in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for G6Pase- $\beta$  siRNA (h): sc-93702, G6Pase- $\beta$  siRNA (m): sc-145293, G6Pase- $\beta$  shRNA Plasmid (h): sc-93702-SH, G6Pase- $\beta$  shRNA Plasmid (m): sc-145293-SH, G6Pase- $\beta$  shRNA (h) Lentiviral Particles: sc-93702-V and G6Pase- $\beta$  shRNA (m) Lentiviral Particles: sc-145293-V.

Molecular Weight of G6Pase- $\beta$ : 34 kDa.

## 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) 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.

## 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.