

# GFAT1 (H-49): sc-134894

## BACKGROUND

Glutamine:fructose-6-phosphate amidotransferase (GFAT1) is the first and rate-limiting enzyme for the entry of glucose into the hexosamine biosynthesis pathway (HBP) in mammals. GFAT1, a member of the N-terminal nucleophile class of amidotransferases, converts fructose-6-phosphate into N-acetylglucosamine-6-phosphate. Hyperglycemia-induced Insulin resistance, a condition in which exposure to high concentrations of glucose and Insulin results in Insulin resistance, may result from increased glucose metabolism through the HBP. Hyperglycemia-induced Insulin resistance is a characteristic feature of type 2 diabetes. Consequently, GFAT1 is a potential therapeutic target in the treatment of type 2 diabetes.

## REFERENCES

1. Nerlich, A.G., et al. 1998. Expression of glutamine:fructose-6-phosphate amidotransferase in human evidence for high variability and distinct regulation in diabetes. *Diabetes* 47: 170-178.
2. Niimi, M., et al. 2001. Identification of GFAT1-L, a novel splice variant of human glutamine: fructose-6-phosphate amidotransferase (GFAT1) that is expressed abundantly in skeletal muscle. *J. Hum. Genet.* 46: 566-571.

## CHROMOSOMAL LOCATION

Genetic locus: GFPT1 (human) mapping to 2p13.3; Gfpt1 (mouse) mapping to 6 D1.

## SOURCE

GFAT1 (H-49) is a rabbit polyclonal antibody raised against amino acids 226-274 mapping within an internal region of GFAT1 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.

## APPLICATIONS

GFAT1 (H-49) is recommended for detection of GFAT1 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).

GFAT1 (H-49) is also recommended for detection of GFAT1 in additional species, including porcine.

Suitable for use as control antibody for GFAT1 siRNA (h): sc-60681, GFAT1 siRNA (m): sc-60682, GFAT1 shRNA Plasmid (h): sc-60681-SH, GFAT1 shRNA Plasmid (m): sc-60682-SH, GFAT1 shRNA (h) Lentiviral Particles: sc-60681-V and GFAT1 shRNA (m) Lentiviral Particles: sc-60682-V.

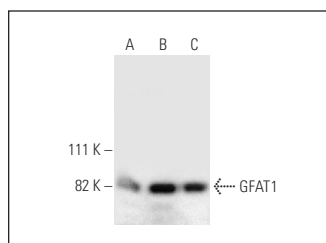
Molecular Weight of GFAT1: 77 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Hep G2 cell lysate: sc-2227 or RD whole cell lysate: sc-364791.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



GFAT1 (H-49): sc-134894. Western blot analysis of GFAT1 expression in HeLa (A), Hep G2 (B) and RD (C) whole cell lysates.

## 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.

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Try **GFAT1 (D-9): sc-377479**, our highly recommended monoclonal alternative to GFAT1 (H-49).