

#3818 Store at -20°C

GFAT1 Antibody


Cell Signaling
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For Research Use Only. Not for Use in Diagnostic Procedures.

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source:	UniProt ID:	Entrez-Gene Id:
WB, IP	H	Endogenous	80	Rabbit	#Q06210	2673

Product Usage Information

Application

Western Blotting
Immunoprecipitation

Dilution

1:1000
1:50

Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA and 50% glycerol. Store at –20°C. Do not aliquot the antibody.

Specificity / Sensitivity

GFAT1 Antibody detects endogenous levels of total GFAT1 protein.

Source / Purification

Polyclonal antibodies are produced by immunizing animals with a synthetic peptide corresponding to the sequence of human GFAT1. Antibodies are purified by protein A and peptide affinity chromatography.

Background

GFAT1, glutamine:fructose-6-phosphate aminotransferase 1, is the rate-limiting enzyme of the hexosamine biosynthesis pathway (1). This enzyme catalyzes the conversion of fructose-6-phosphate and glutamine to glucosamine-6-phosphate and glutamate (2). The hexosamine biosynthesis pathway generates the building blocks for protein and lipid glycosylation (2). Furthermore, studies suggest that increased activity of this pathway is a contributing factor to hyperglycemia-induced insulin resistance (1,2). GFAT1 is more active in non-insulin-dependent diabetes mellitus (NIDDM) patients (3). Transgenic mice overexpressing this enzyme in skeletal muscle and adipose tissue show an insulin resistance phenotype (4,5). GFAT2, an isoenzyme of GFAT1, was later identified (6,7). Studies show that the regulation of GFAT2 is different from that of GFAT1, suggesting differential regulation of the hexosamine pathway in different tissues (7).

Background References

1. Niimi, M. et al. (2001) *J Hum Genet* 46, 566-71.
2. DeHaven, J.E. et al. (2001) *Diabetes* 50, 2419-24.
3. Yki-Järvinen, H. et al. (1999) *Life Sci* 65, 215-23.
4. Cooksey, R.C. et al. (1999) *Endocrinology* 140, 1151-7.
5. Hebert, L.F. et al. (1996) *J Clin Invest* 98, 930-6.
6. Oki, T. et al. (1999) *Genomics* 57, 227-34.
7. Hu, Y. et al. (2004) *J Biol Chem* 279, 29988-93.

Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

Applications Key

WB: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
X: Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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