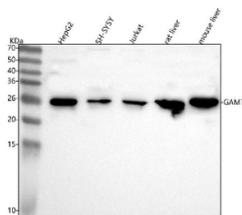


GAMT Antibody / Guanidinoacetate N-methyltransferase (FY12646)

Catalog No.	Formulation	Size
FY12646	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

[Bulk quote request](#)

Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na ₂ HPO ₄ .
UniProt	Q14353
Applications	Western Blot : 0.25-0.5ug/ml ELISA : 0.1-0.5ug/ml
Limitations	This GAMT antibody is available for research use only.



Western blot analysis of GAMT using anti-GAMT antibody. Lane 1: human HepG2 whole cell lysates, Lane 2: human SH-SY5Y whole cell lysates, Lane 3: human Jurkat whole cell lysates, Lane 4: rat liver tissue lysates, Lane 5: mouse liver tissue lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-GAMT antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using enhanced chemiluminescent. A specific band was detected for GAMT at approximately 26 kDa. The expected molecular weight of GAMT is ~26 kDa.

Description

GAMT antibody detects Guanidinoacetate N-methyltransferase, an enzyme that catalyzes the final step in the biosynthesis of creatine, a key molecule for cellular energy storage and transfer. GAMT converts guanidinoacetate and S-adenosyl-L-methionine into creatine and S-adenosyl-L-homocysteine, a critical reaction for maintaining high-energy

phosphate metabolism in muscle and neural tissues. The GAMT antibody is widely used in metabolism, neurology, and biochemical research to study creatine biosynthesis, methylation pathways, and energy regulation.

GAMT is encoded by the GAMT gene located on human chromosome 19p13.3. The protein is approximately 236 amino acids long and localizes to the cytoplasm and mitochondria of metabolically active cells such as skeletal muscle fibers, hepatocytes, and neurons. GAMT belongs to the family of methyltransferases and functions as a homodimer, with each subunit contributing to catalytic activity and substrate specificity.

The GAMT antibody detects a 28 kilodalton protein by western blot and shows cytosolic and mitochondrial localization by immunofluorescence microscopy. Creatine synthesized by GAMT is essential for buffering cellular ATP levels through the phosphocreatine shuttle system, particularly in tissues with fluctuating energy demands. In the brain, creatine supports neuronal excitability and synaptic transmission, while in muscle, it sustains rapid contraction and recovery.

Deficiency of GAMT causes guanidinoacetate methyltransferase deficiency, a rare inborn error of metabolism characterized by creatine depletion in the brain, developmental delay, seizures, and movement disorders. Accumulation of guanidinoacetate is neurotoxic, leading to oxidative stress and neurotransmission imbalance. Early diagnosis through enzyme assays or molecular testing is critical, as dietary creatine supplementation can mitigate neurological symptoms.

Beyond its metabolic role, GAMT activity influences methylation capacity, homocysteine metabolism, and nitric oxide synthesis, linking it to broader aspects of cellular function. Altered GAMT expression has been associated with cardiovascular disease, neurodegeneration, and aging due to impaired energy homeostasis and methyl donor imbalance.

Because GAMT is central to energy metabolism and methyl group regulation, it serves as an important biomarker for studying metabolic diseases and neurological function. NSJ Bioreagents provides a validated GAMT antibody optimized for its applications, supporting research into creatine metabolism, mitochondrial function, and energy regulation.

Application Notes

Optimal dilution of the GAMT antibody should be determined by the researcher.

Immunogen

E.coli-derived human GAMT recombinant protein (Position: M1-G236) was used as the immunogen for the GAMT antibody.

Storage

After reconstitution, the GAMT antibody can be stored for up to one month at 4°C. For long-term, aliquot and store at -20°C. Avoid repeated freezing and thawing.