# GLYAT Antibody / Glycine-N-acyltransferase (FY12185)

| Catalog No. | Formulation | Size |
|---|---|---|
| FY12185 | Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml | 100 ug |

**Bulk quote request**

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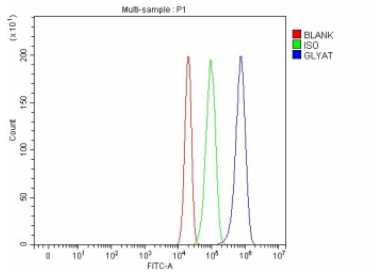
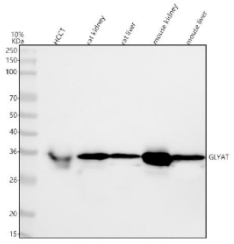
|---|---|
| **Availability** | 1-2 days |
| **Species Reactivity** | Human, Mouse, Rat |
| **Format** | Lyophilized |
| **Host** | Rabbit |
| **Clonality** | Polyclonal (rabbit origin) |
| **Isotype** | Rabbit IgG |
| **Purity** | Immunogen affinity purified |
| **Buffer** | Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4. |
| **UniProt** | Q6IB77 |
| **Applications** | ELISA : 0.1-0.5ug/ml<br>Flow Cytometry : 1-3ug/million cells<br>Western Blot : 0.25-0.5ug/ml |
| **Limitations** | This GLYAT antibody is available for research use only. |




Flow Cytometry analysis of RT4 cells using anti-GLYAT antibody. Overlay histogram showing RT4 cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-GLYAT antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.



Western blot analysis of GLYAT using anti-GLYAT antibody. Lane 1: human hepatocellular carcinoma tumor tissue (HCCT) lysates, Lane 2: rat kidney tissue lysates, Lane 3: rat liver tissue lysates, Lane 4: mouse kidney 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-GLYAT 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 GLYAT at approximately 34 kDa. The expected band size for GLYAT is at 34 kDa.

## Description

GLYAT antibody detects Glycine-N-acyltransferase, encoded by the GLYAT gene on chromosome 11q12.1. GLYAT antibody is widely used to study this phase II conjugating enzyme involved in detoxification and metabolism of acyl-CoA thioesters. GLYAT catalyzes conjugation of glycine to acyl-CoA substrates, producing acylglycines that are more water-soluble and easily excreted. Expression is highest in liver and kidney, the major detoxification organs, but it is also present in brain and other tissues involved in metabolic processing.

Structurally, GLYAT is a mitochondrial matrix enzyme belonging to the acyltransferase family. It contains conserved motifs for CoA binding and catalytic activity. Structural studies suggest GLYAT functions as a homodimer, with active sites capable of accommodating medium- to long-chain acyl-CoA substrates. This structural adaptability allows it to process a wide range of xenobiotic and endogenous compounds.

Functionally, GLYAT contributes to detoxification of acyl-CoA intermediates generated during fatty acid, amino acid, and xenobiotic metabolism. By conjugating glycine to these intermediates, GLYAT prevents their accumulation and toxicity. Acylglycines produced by GLYAT can serve as diagnostic markers of inborn errors of metabolism, including organic acidemias. Knockdown studies demonstrate impaired detoxification capacity and increased cellular stress. Researchers use GLYAT antibody to study metabolic regulation, detoxification, and biomarker pathways.

Clinically, GLYAT deficiency or reduced activity is associated with metabolic disorders characterized by elevated toxic acyl-CoA levels. Acylglycine profiling is used in newborn screening for metabolic diseases such as isovaleric acidemia. GLYAT expression has also been linked to cancer, where metabolic reprogramming alters detoxification pathways. Additionally, GLYAT is implicated in drug metabolism and may influence individual responses to xenobiotics. NSJ Bioreagents offers GLYAT antibody as a research tool in toxicology, metabolism, and disease studies.

Experimentally, GLYAT antibody is applied in western blotting to detect the ~34 kDa protein, in immunofluorescence microscopy to confirm mitochondrial localization, and in immunohistochemistry to analyze tissue expression. Enzymatic assays combined with GLYAT antibody detection help characterize acyltransferase activity under different conditions.

## Application Notes

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

## Immunogen

E.coli-derived human GLYAT recombinant protein (Position: K44-L296) was used as the immunogen for the GLYAT antibody.

## Storage

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

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