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# **DATASHEET**

Anti-GAT1 Antibody ValidAbTM

### **Product overview**

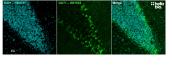
Name Anti-GAT1 Antibody ValidAb™

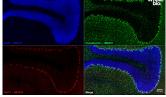
Cat NoHB7632HostRabbitClonalityPolyclonalTargetGAT1

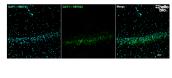
**Description** Antibody to GAT1 - GABA reuptake transporter and marker for GABAergic interneurones. Part of the

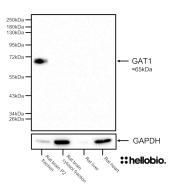
ValidAb™ range of highly validated, data-rich antibodies.

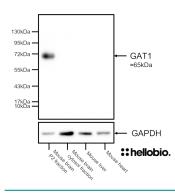
### Validation data

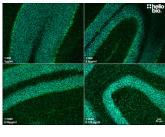


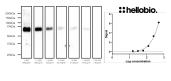












### **Product information**

Immunogen Synthetic peptide corresponding to the C-terminal region of rat GAT1 conjugated to KLH

**Isotype** Ig

Purification Immunogen affinity chromatography

Concentration 0.25mg/ml

Formulation 10mM HEPES (pH 7.5), 150mM NaCl, 100 μg/ml BSA and 50% glycerol.

Predicted species reactivity Mouse, Rat Tested species reactivity Mouse, Rat

# **Tested applications**

Applications WB, IHC(IF)

Western blot optimal

125ng/ml (1:2,000) as tested in a mouse brain P2 membrane preparation

concentration

Positive control

IHC(IF) optimal concentration 500ng/ml (1:500) as tested in rat cerebellum sections

GAT1 is highly expressed within the GABAergic interneurones of the CNS therefore brain samples (and especially membrane enriched samples) make an excellent positive control. GAT1 expression

has also been reported in K-562, Hel and HMC-1 cell lines (see the human protein atlas for more

**Negative control** GAT1 is poorly expressed in peripheral tissues therefore these make a good negative control.

Adittionally the majority of cell lines, including HEK293, HeLa and SH-SY5Y cells, do not express

Open data link Please follow this link to OSF

### **Target information**

Other names Sodium- and chloride-dependent GABA transporter 1, SLC6A1, Solute carrier family 6 member 1

**UniProt ID** P30531 Gene name SLC6A1

NCBI full gene name solute carrier family 6 member 1

Entrez gene ID 6529 Amino acids

599 (67.1kDa) Isoforms GAT1 only has one described isoform.

**Expression** GAT1 is primarily expressed in GABAergic interneurones within the CNS. There is also expression at a

lower level in some peripheral organs (see Erdo and Wolff, 1990). There have also been reports of

GAT1 residing within astrocytic processes in the CNS (see Minelli et al., 1995).

Subcellular expression GAT1 is expressed in the plasma membrane and is enriched in axon terminals.

**Target function** GAT1 is a transmembrane re-uptake transporter that removes GABA from the synaptic cleft into

presynaptic neurones and astrocytes.

**Processing** None

Post translational GAT1 is subject to phosphorylation on Ser18 and Ser591 alongside N-linked glycosylation on residues

modifications 176, 181 and 184

Homology (compared to

human) Similar proteins Mouse and rat GAT1 proteins are identical to each other and both have a 98% identity to human GAT1 in a BLAST search. This corresponds to 12 amino acid changes compared to the human sequence. GAT2 and GAT3 have a 52.1% and 54.6% identity to GAT1 in a BLAST search. These were the only

identified proteins with significant homology with GAT1.

## Storage & Handling

Storage instructions **Shipping Conditions** 

**Important** 

-20°C On ice

This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not

for human or veterinary use

#### References

GAT-1, a high-affinity GABA plasma membrane transporter, is localized to neurons and astroglia in the cerebral cortex.

Minelli A et al (1995) The Journal of neuroscience : the official journal of the Society for Neuroscience 15

**PubMedID** 7472524

Structure, Function, and Modulation of  $\gamma$ -Aminobutyric Acid Transporter 1 (GAT1) in Neurological Disorders: A **Pharmacoinformatic Prospective.** 

Zafar S et al (2018) Frontiers in chemistry 6 **PubMedID** 30255012

GAT1 and GAT3 expression are differently localized in the human epileptogenic hippocampus.

Lee TS et al (2006) Acta neuropathologica 111 **PubMedID** 16456667

Current knowledge of SLC6A1-related neurodevelopmental disorders.

Goodspeed K et al (2020) Brain communications 2 **PubMedID** 33241211