

VGAT (h): 293T Lysate: sc-116499

BACKGROUND

Synaptic transmission involves the controlled exocytosis of vesicles containing specific neurotransmitters. Usually, neurotransmitters are synthesized in the cytoplasm of the cell and must be transported into synaptic vesicles for release. The vesicular GABA transporter (VGAT) is responsible for loading γ -aminobutyric acid (GABA), an inhibitory neurotransmitter, from neuronal cytoplasm into synaptic vesicles and is expressed only in the nerve endings of inhibitory neurons that contain GABA and/or glycine. During neocortical development, VGAT expression barely precedes the maturation of inhibitory synaptogenesis, suggesting that it may contribute to the development of neocortical GABAergic circuitry. VGAT may also play a role in epileptogenesis and the recovery mechanisms that occur after a spontaneous seizure.

REFERENCES

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3. End, K., et al. 2005. Receptors and sites of synthesis and storage of γ -aminobutyric acid in human pituitary glands and in growth hormone adenomas. *Am. J. Clin. Pathol.* 124: 550-558.
4. Gerstein, M., et al. 2005. Remodeling of hippocampal GABAergic system in adult offspring after maternal hypoxia and magnesium sulfate load: immuno-histochemical study. *Exp. Neurol.* 196: 18-29.
5. Oh, W.J., et al. 2005. The mouse vesicular inhibitory amino acid transporter gene: expression during embryogenesis, analysis of its core promoter in neural stem cells and a reconsideration of its alternate splicing. *Gene* 351: 39-49.
6. Vemuganti, R. 2005. Decreased expression of vesicular GABA transporter, but not vesicular glutamate, acetylcholine and monoamine transporters in rat brain following focal ischemia. *Neurochem. Int.* 47: 136-142.
7. Zink, M., et al. 2005. Ethanol induces GAD-67 and VGAT in slice cultures of newborn rat cerebral cortex. *Neuroreport* 16: 377-380.
8. Bogen, I.L., et al. 2006. Absence of Synapsin I and II is accompanied by decreases in vesicular transport of specific neurotransmitters. *J. Neurochem.* 96: 1458-1466.
9. Frahm, C., et al. 2006. Stable expression of the vesicular GABA transporter following photothrombotic infarct in rat brain. *Neuroscience* 140: 865-877.

CHROMOSOMAL LOCATION

Genetic locus: SLC32A1 (human) mapping to 20q11.23.

PRODUCT

VGAT (h): 293T Lysate represents a lysate of human VGAT transfected 293T cells and is provided as 100 μ g protein in 200 μ l SDS-PAGE buffer.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

APPLICATIONS

VGAT (h): 293T Lysate is suitable as a Western Blotting positive control for human reactive VGAT antibodies. Recommended use: 10-20 μ l per lane.

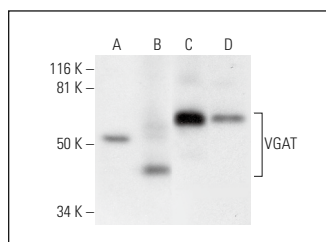
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

VGAT (F-2): sc-393373 is recommended as a positive control antibody for Western Blot analysis of enhanced human VGAT expression in VGAT transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:
1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048.

DATA



VGAT (F-2): sc-393373. Western blot analysis of VGAT expression in non-transfected: sc-117752 (A) and human VGAT transfected: sc-116499 (B) 293T whole cell lysates and mouse brain (C) and rat brain (D) tissue extracts.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.