

AGT1 (I-13): sc-86967



The Power to Question

BACKGROUND

AGT1, also known as SLC7A13 (solute carrier family 7 member 13) or XAT2 (X-amino acid transporter 2), is a 470 amino acid multi-pass membrane protein that belongs to the amino acid-polyamine-organocation (APC) superfamily. Expressed specifically in kidney tissue, AGT1 functions to mediate the transport of L-aspartate and L-glutamate in a sodium-independent manner, thereby regulating transport dynamics within the kidneys. AGT1 is expressed as two alternatively spliced isoforms and is encoded by a gene that maps to chromosome 8. Consisting of nearly 146 million base pairs, chromosome 8 encodes over 800 genes and is associated with a variety of diseases and malignancies. Schizophrenia, bipolar disorder, Trisomy 8, Pfeiffer syndrome, congenital hypothyroidism, Waardenburg syndrome and some leukemias and lymphomas are thought to occur as a result of defects in specific genes that maps to chromosome 8.

REFERENCES

- Han, E.K., et al. 1995. Characterization of AGT1 encoding a general α -glucoside transporter from *Saccharomyces*. *Mol. Microbiol.* 17: 1093-1107.
- Plourde-Owobi, L., et al. 1999. AGT1, encoding an α -glucoside transporter involved in uptake and intracellular accumulation of trehalose in *Saccharomyces cerevisiae*. *J. Bacteriol.* 181: 3830-3832.
- Begum, L., et al. 2002. Expression of three mitochondrial solute carriers, citrin, aralar1 and ornithine transporter, in relation to urea cycle in mice. *Biochim. Biophys. Acta* 1574: 283-292.
- Blondeau, J.P. 2002. Homologues of amino acid permeases: cloning and tissue expression of XAT1 and XAT2. *Gene* 286: 241-248.
- Matsuo, H., et al. 2002. Identification of a novel Na⁺-independent acidic amino acid transporter with structural similarity to the member of a heterodimeric amino acid transporter family associated with unknown heavy chains. *J. Biol. Chem.* 277: 21017-21026.
- Palacín, M., et al. 2004. The ancillary proteins of HATs: SLC3 family of amino acid transporters. *Pflugers Arch.* 447: 490-494.
- Sarthy, V.P., et al. 2005. Glutamate transport by retinal Muller cells in glutamate/aspartate transporter-knockout mice. *Glia* 49: 184-196.

CHROMOSOMAL LOCATION

Genetic locus: SLC7A13 (human) mapping to 8q21.3.

SOURCE

AGT1 (I-13) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of AGT1 of human origin.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-86967 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

AGT1 (I-13) is recommended for detection of AGT1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for AGT1 siRNA (h): sc-77455, AGT1 shRNA Plasmid (h): sc-77455-SH and AGT1 shRNA (h) Lentiviral Particles: sc-77455-V.

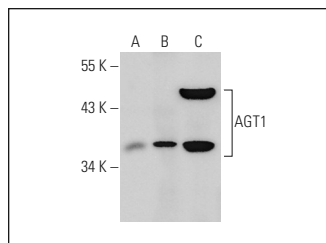
Molecular Weight of AGT1: 40 kDa.

Positive Controls: ACHN whole cell lysate: sc-364365, human kidney extract: sc-363764 or human cerebellum tissue extract.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



AGT1 (I-13): sc-86967. Western blot analysis of AGT1 expression in ACHN whole cell lysate (A) and human kidney (B) and human cerebellum (C) tissue extracts.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

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

PROTOCOLS

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