



SLC41A3 (W-14): sc-100156

BACKGROUND

SLC41A3 (Solute carrier family 41 member 3) is a 507 amino acid multi-pass membrane protein that belongs to the SLC41A transporter family that includes SLC41A1 and SLC41A2. Localizing to the cell membrane, SLC41A3 contains ten transmembrane domains and is believed to function as a plasma-membrane cation transporter. Its other two family members, SLC41A1 and SLC41A2, have been characterized to function as magnesium transporters and are essential for maintaining magnesium homeostasis within the cell. It is likely that SLC41A3 also transports magnesium, which as a cofactor for ATP, plays a vital role in metabolic and biochemical processes. There are seven isoforms of SLC41A3 that are produced as a result of alternative splicing events.

REFERENCES

1. Wabakken, T., Rian, E., Kveine, M. and Aasheim, H.C. 2003. The human solute carrier SLC41A1 belongs to a novel eukaryotic subfamily with homology to prokaryotic MgtE Mg²⁺ transporters. *Biochem. Biophys. Res. Commun.* 306: 718-724.
2. Goytain, A. and Quamme, G.A. 2005. Functional characterization of the mouse [corrected] solute carrier, SLC41A2. *Biochem. Biophys. Res. Commun.* 330: 701-705.
3. Goytain, A. and Quamme, G.A. 2005. Functional characterization of human SLC41A1, a Mg²⁺ transporter with similarity to prokaryotic MgtE Mg²⁺ transporters. *Physiol. Genomics* 21: 337-342.
4. Maguire, M.E. 2006. Magnesium transporters: properties, regulation and structure. *Front. Biosci.* 11: 3149-3163.
5. Sahni, J., Nelson, B. and Scharenberg, A.M. 2007. SLC41A2 encodes a plasma-membrane Mg²⁺ transporter. *Biochem. J.* 401: 505-513.
6. Schmitz, C., Deason, F. and Perraud, A.L. 2007. Molecular components of vertebrate Mg²⁺-homeostasis regulation. *Magnes. Res.* 20: 6-18.
7. Sontia, B. and Touyz, R.M. 2007. Magnesium transport in hypertension. *Pathophysiology* 14: 205-211.
8. Kolisek, M., Launay, P., Beck, A., Sponder, G., Serafini, N., Brenkus, M., Froschauer, E.M., Martens, H., Fleig, A. and Schweigel, M. 2008. SLC41A1 is a novel mammalian Mg²⁺ carrier. *J. Biol. Chem.* 283: 16235-16247.
9. Moomaw, A.S. and Maguire, M.E. 2008. The unique nature of Mg²⁺ channels. *Physiology* 23: 275-285.

CHROMOSOMAL LOCATION

Genetic locus: SLC41A3 (human) mapping to 3q21.2; Slc41a3 (mouse) mapping to 6 D1.

SOURCE

SLC41A3 (W-14) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of SLC41A3 of human origin.

STORAGE

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

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-100156 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

SLC41A3 (W-14) is recommended for detection of SLC41A3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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); non cross-reactive with family members SLC41A1 or SLC41A2.

Suitable for use as control antibody for SLC41A3 siRNA (h): sc-78329, SLC41A3 siRNA (m): sc-153561, SLC41A3 shRNA Plasmid (h): sc-78329-SH, SLC41A3 shRNA Plasmid (m): sc-153561-SH, SLC41A3 shRNA (h) Lentiviral Particles: sc-78329-V and SLC41A3 shRNA (m) Lentiviral Particles: sc-153561-V.

Molecular Weight of SLC41A3: 55 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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.