ALPHA DIAGNOSTIC INTERNATIONAL

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Product Specification Sheet

Sodium Glucose Transporter 1 (SGLT-1) Antibodies

¾ Cat # SG13-P	Human SGLT-1 control peptide # 3	**SIZE**: 100 ug
¾ Cat # SG13-S	Rabbit Anti-Human SGLT-1 Antiserum # 3	**SIZE**: 100 ul
¾ Cat # SG13-A	Rabbit Anti-Human SGLT-1 IgG # 3, aff pure	**SIZE**: 100 ug

The kidneys play a major role in the regulation of glucose levels. Kidneys filter approx. 180 g of glucose per day from the blood, and this is mostly reabsorbed back into the blood in the proximal tubules. Typically, glucose is first absorbed within epithelium by a specific transporter protein, Sodium glucose co transporters (SGLT), in the brush-border membrane and then it is transported out of the cell across the basolateral membranes by a facilitated sugar transporter (GLUTs). At least 3 members of SGLTs (SGLT1-3) have been cloned and characterized from various species. Individual member of this family have identical predicted secondary structures with up to 14 transmembrane domains. SGLT1-3 genes code for protein of approx 659-672 residues (calculated size of ~75 kDa). Both N and C-termini are predicted to be extracellualr. There is approx 60-70% homology between SGLT1-3. SGLTs transport a-methyl-D-glucoside (a-MDG), a non-metabolized model substrate, in Na-dependent manner. SGLT1 does not discriminate a-MDG, glucose, and galactose. SGLT2/3 do not transport D-galactose efficiently.

SGLT1/NAGT or SLC5A1/NAGT (rat/mouse 665 aa; human 664 aa, chromosome 22q13.1, ~75 kDa) is a high affinity, Na+-coupled, intestinal responsible for active glucose transport across the brush border membrane. In the kidney, SGLT1 is expressed in proximal tubule Sq1 segments. It is also expressed in the intestine. Defects in SGLT1 gene have been implicated in congenital glucose-galactose malabsorption syndrome (GGM).

Source of Antigen and Antibodies

Antigen	16-aa peptide from **human SGLT-1 (1)**; **Designation (SG13-P, control/blocking peptide**) conjugated to KLH; epitope location ~ C-terminus, Cytoplasmic domain
Ab Host/type	Rabbit, Polyclonal unpurified antiserum (#SG13-S) and IgG, purified over antigen-agarose (Cat # SG13-A)
2-Ab	Cat # 20320, goat anti-rabbit IgG-HRP (AP, biotin, FITC conjugates also available).
-ve control IgG	# 20009-1, Rabbit (non-immune) IgG, purified, suitable for ELISA, Western, IHC as –ve control

Form & Storage of Antibodies/Peptide Control

Antiserum (unpurified)
□ 100ul □□ solution □ lyophilized powder
Supplied 0.05% azide, **Reconstitute** powder in 100 ul PBS

Affinity pure IgG
□ 100 ug/100ul □ solution □ lyophilized powder
Supplied in **Buffer**: PBS+0.1% BSA
Reconstitute powder in PBS at 1mg/ml

Control/blocking peptide
□ 100 ug/100 ul □ solution □ lyophilized powder
Supplied in Buffer: PBS pH 7.5,
Reconstitute powder in PBS at 1 mg/ml.

Storage

Short-term: unopened, undiluted liquid vials at -20OC and powder at 4oC or -20oC..

Long-term: at –20C or below in suitable aliquots after reconstitution. Do not freeze and thaw and store working, diluted solutions.

Stability: 6-12 months at –20oC or below.
Shipping: 4oC for solutions and room temp for powder

Recommended Usage

Western Blotting (1:1K-5K for neat serum and 1-10 ug/ml for affinity pure antibody using Chemiluminescence technique). SGLT-1 is apparox 70-77 kDa (2).

ELISA: Control peptide can be used to coat ELISA plates at 1 ug/ml and detected with antibodies (1:10-50K for neat serum and 0.5-1 ug/ml for affinity pure).

Histochemistry & Immunofluorescence: not tested.

Specificity & Cross-reactivity

The human SG13-P peptide sequence is 56% conserved in mouse and rat SGLT1. No significant sequence homology exists with other SGLTs. For mouse/rat, we recommend the use antibody #2, Cat # SG12-S that is made to the rat SGLT-1 peptide. Control peptide, because of its low mol. Wt (<3 kDa), is not suitable for Western. It should be used for ELISA or antibody blocking experiments (use 5-10 ug control peptide per 1 ug of aff pure IgG or 1 ul antiserum) to confirm antibody specificity (see detailed protocol see detailed protocol at the web site).

General References: (1) ; Lee WS (1994) JBC 269, 12032, Gene accession # AF163846; 2. Hediger, MA (1987) Nature 330, 1379; 3. Sileverman , M (1993) BBA 1153, 43; Pajor, AM (1992) Am. J. Physiol. 32, R489; Hirayama, EA (1992) BBA 1103, 37; Hirayama (1991) Am. J. Physiol. 261, C296

Citations of for ADI Antibodies (see updated list at the web site)

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Lane RH, 2002, Am J Physiol Regulatory Integrative Comp Physiol 283: R1450-R1460, IHC,

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*This product is for In vitro research use only.

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