ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

Sodium Glucose Transporter 2 (SGLT-2) Antibodies

Cat # SG23-P	Rat SGLT-2 control peptide # 1	**SIZE**: 100 ug
Cat # SG23-S	Rabbit Anti-Rat SGLT-2 Antiserum # 1	**SIZE**: 100 ul
Cat # SG23-A	Rabbit Anti-Rat SGLT-2 IgG # 1, 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.

SGLT2/SLC5A2 (rat/mouse 670 aa; human 672 aa, chromosome 16p11.2) is the low affinity, high capacity Na+-glucose transporter located in the S1 segments of proximal tubules. It is ~60% identical with SGLT1. SGLT2 mediates saturable Na-dependent and phlorizin-sensitive glucose transport. In contrast with SGLT1, SGLT2 does not transport D-galactose. Defect in SGLT2 may be associated with renal glycosuria.

Source of Antigen and Antibodies

Antigen	16-aa peptide from **rat SGLT-2 (1)**; **Designation (cat # SG23-P, control or blocking peptide**) conjugated to KLH; epitope location ~ N-terminus, Cytoplasmic domain 1
Ab Host/type	Rabbit, Polyclonal unpurified antiserum (#**SG23**-S) and IgG, purified over antigen-agarose (Cat # **SG23**-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).

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 Rat SG23-P peptide sequence is 86% conserved in mouse SGLT2. No significant sequence homology exists with other SGLTs. For human SGLT2, we recommend the use antibody #2, Cat # SG24-S that is made to the human SGLT-2 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) Wells RG (1995) JBC 270, 29365-29371; Wells RG (1992) Amj. J. Physiol. 263, F459-F465; Kanai Y (1994) J. Clin. Invest. 93, 397; Wright E (2001) Am. J. Physiol. Renal Physiol. 280, F10-F18 (review)

(2) Citations of ADI's Antibodies (see web site for updated list)

Lee YJ, 2007, Am J Physiol Cell Physiol, 293, F1036-F1046, WB,
Bautista R, 2004, Am J Physiol Renal Physiol, 286: 127 - 133, WB, IHC
Han HJ, 2005, Am J Physiol Renal Physiol, 288: 988 - 996., WB,
Han HJ, 2004, Toxicology in Vitro 19, 21-30, WB,
Han HJ, 2004, Am J Physiol Renal Physiol, 286: 634 - 642, WB,
Rahmoune H, 2005, Diabetes, Dec 2005; 54: 3427 - 3434, WB,

*This product is for In vitro research use only.

Antibodies to SGLT1-3, RS11, and Glut1-13
SG23-S-A-P 71213A

Alpha Diagnostic Intl Inc., 6203 Woodlake Center Dr, San Antonio, TX 78244, USA; **Email**: service@4adi.com
☎ (800) 786-5777; (210) 561-9515; **Fax**: (210) 561-9544; **Web Site**: www.4adi.com