ALPHA DIAGNOSTIC INTERNATIONAL

Product Specification Sheet

**K+-Cl- Cotransporter-4 (KCC4) Antibodies**

| | | |
|---|---|---|
| □ **Cat.** KCC41-S | Rabbit Anti-Mouse KCC4 Antiserum # 1 | **SIZE**: 100 ul |
| □ **Cat.** KCC41-A | Rabbit Anti-Mouse KCC4 Ig G # 1(aff pure) | **SIZE**: 100 ul |
| □ **Cat.** KCC41-P | Mouse KCC4 Control peptide # 1 | **SIZE**: 100 ug |

Chloride is a critical component of all living cells. It is also the single most dominant diffusible anion inside of most cells - the others are mostly impermeable organic anions. Since cytoplasmic electroneutrality is maintained under normal physiological environment, changes in cellular chloride level is accompanied by total cell solute content. The cation chloride cotransporters (**CCC**) protein family is involved in the electroneutral movement of ions across the cell membrane.

The K-Cl cotransporters mediate the coupled movement of K+ and Cl- ions across the cell membranes. This transport process is involved in the regulatory volume decrease in response to cell swelling in red cells and vectorial movement of Cl- ions across the kidney epithelia. The net direction of this transport is out of the cells. At least four isoforms of KCC identified (**KCC1, KCC2, KCC3, and KCC4**) have been identified and functionally characterized. KCC are predicted to have the same protein structure: 12 transmembrane domains with a large extracellular loop with potential N-glycosylation sites, and the cytoplasmic N and C-termini.

Most recently, **KCC4** (mouse and human 1083 aa) have been cloned that are 65-71% identical to KCC1/KCC2. It is highly expressed in heart and kidney.

## Source of Antigen and Antibodies

| | |
|---|---|
| **Antigen** | 16aa peptide of Mouse KCC4 ; (Gene Accession #Q9WVL3) **Designated (KCC41-P or control peptide).** |
| **Location** | ~ N-terminal, Cytoplasmic |
| **Ab Host/type** | Rabbit, polyclonal; Unpurified antiserum (cat #KCC41-S) Aff pure IgG (**cat #KCC41-A**) |
| **2-ab** | **Goat Anti-rabbit IgG-HRP** cat # 20320 (AP, biotin, FITC conjugates also available) |
| **-ve control** | **# 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 in Buffer: 0.05% azide
**Reconstitute** powder in 100 ul PBS

**Affinity pure IgG**
□ 100ul □ solution □ lyophilized powder
Supplied in **Buffer**: PBS+0.1% BSA
**Reconstitute powder** in PBS

**Control/blocking peptide**
□ 100 ug/100 ul □ solution □ lyophilized powder
Supplied in Buffer: PBS pH 7.5
**Reconstitute powder in PBS**

**Storage**

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

**Long-term**: at –20°C 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** 1-10 ug/ml for affinity pure or 1:500:1:000 for neat serum using Chemiluminescence technique.

**ELISA** (1:10K-1:100K; using 50-100 ng of control peptide/well).

**Histochemistry** & Immunofluorescence: Not tested. We recommend the use of affinity purified antibody at 2-20 ug/ml in formaldehyde fixed tissue.

## Specificity & Cross-reactivity

Mouse KCC41-P sequence is 100% rat, 81% in human KCC4. No significant sequence homology was found with other KCCs or CCC. Antibody crossreactivity in various species is not established. We recommend the use of control peptide in antibody blocking experiments to establish antibody specificity. 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 at: www.4adi.com\data\abblock.html).

**General References**: Hiki K et al (1999) J Biol. Chem 274, 10661-10667; Mount DB et al (1999) 274, 16355-16362; Mount DB et al (1998) J Exptl. Biol. 201, 2091; O'Neill WC (1999) Am J. Physiol. 276, C995.

*This product is for in vitro research use only.

### Related material available from ADI

Antibodies to KCC1-4, NKCC, NCC, OAT, OCT, AE13, NBCs, CLC1-7;

**Western Blot recycling kit** (Use the same blot to probe with multiple antibodies Ang-1 and Ang-2, etc.) **recycle blot at room temp in 5-10 min**; No mercaptoethanol or heating required).

**ReadyBlot Kidney Explorer** (study distribution of proteins in pre-made protein blots from 9 regions of rat/kidney)

KCC41-S-A-P 180111AC

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