SANTA CRUZ BIOTECHNOLOGY, INC.

KCC2 (N-14)-R: sc-19419-R

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The four isoforms of potassium/chloride co-transport channels (KCC) belong to a superfamily of cation-chloride co-transporters involved in cell volume maintenance. Nitric oxide (NO) donors activate KCCs, while inhibitors of the cGMP pathway prevent NO donor activation. The ubiquitously expressed KCC1 contains 12 transmembrane domains with both cytoplasmic N- and C-terminal domains. KCC2 expression is limited to neuronal tissues by a restrictive element similar to the neuronal-restrictive silencing factor. In neurons, KCC2 expression is correlated with an inhibitory response to GABA, while the absence of KCC2 is necessary for an unusual excitatory response to GABA. Alterations of KCC2 expression in the inferior colliculus of rat brain may be related to seizure susceptibility. Conversely, KCC3 is not suspected to play a major role in epilepsy. The two splice variants of KCC3, KCC3α and KCC3β, are predominantly expressed in brain and kidney, respectively, while KCC4 is expressed in muscle, brain, lung, heart and kidney.

REFERENCES

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4. Lauf, P.K., et.al. 2001. K-Cl co-transport: immunohistochemical and ion flux studies in human embryonic kidney (HEK293) cells transfected with full length and C-terminal-domain-truncated KCC1 cDNAs. Am. J. Physiol. Cell Physiol. 281: 670-680.
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7. Kanaka, C., et. al. 2001. The differential expression patterns of messenger RNAs encoding K-Cl co-transporters (KCC1,2) and Na-K-Cl co-transporter (NKCC1) in the rat nervous system. Neuroscience 104: 933-946.
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CHROMOSOMAL LOCATION

Genetic locus: SLC12A5 (human) mapping to 20q13.12; Slc12a5 (mouse) mapping to 2 G2-G3.

SOURCE

KCC2 (N-14)-R is an affinity purified rabbit polyclonal antibody raised against a peptide mapping near the N-terminus of KCC2 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-19419 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

KCC2 (N-14) is recommended for detection of KCC2 and, to a lesser extent KCC1 and KCC3 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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).

KCC2 (N-14)-R is also recommended for detection of KCC2 and, to a lesser extent KCC1 and KCC3 in additional species, including equine, canine and bovine.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

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.