

# KCC1 (FT-94): sc-134370

## 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, KCC3a and KCC3b, 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 cotransport: immunohistochemical and ion flux studies in human embryonic kidney (HEK293) cells transfected with full-length and C-terminal-domain-truncated KCC1 cDNAs. *Cell. Physiol. Biochem.* 11: 143-160.
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6. Hubner, C.A., et al. 2001. Disruption of KCC2 reveals an essential role of K-Cl cotransport already in early synaptic inhibition. *Neuron* 30: 515-524.
7. Kanaka, C., et al. 2001. The differential expression patterns of messenger RNAs encoding K-Cl cotransporters (KCC1,2) and Na-K-Cl cotransporter (NKCC1) in the rat nervous system. *Neuroscience* 104: 933-946.
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## CHROMOSOMAL LOCATION

Genetic locus: SLC12A4 (human) mapping to 16q22.1.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## SOURCE

KCC1 (FT-94) is a mouse monoclonal antibody raised against recombinant KCC1 protein of human origin.

## PRODUCT

Each vial contains 100 µg IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

KCC1 (FT-94) is recommended for detection of KCC1 of 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)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for KCC1 siRNA (h): sc-42604, KCC1 shRNA Plasmid (h): sc-42604-SH and KCC1 shRNA (h) Lentiviral Particles: sc-42604-V.

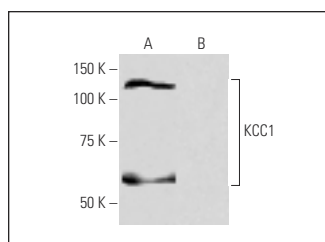
Molecular Weight of KCC1: 121/119/112/85 kDa.

Positive Controls: human KCC1 transfected 293T whole cell lysate.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

## DATA



KCC1 (FT-94): sc-134370. Western blot analysis of KCC1 expression in human KCC1 transfected (A) and non-transfected (B) 293T whole cell lysates.

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.