10320 Camino Santa Fe, Suite G
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KCC2 Antibody
KCC2 Antibody, Clone S1-12
Catalog # ASM10226

Specification

KCC2 Antibody - Product Information

Application	**WB, IHC, ICC, IP**
Primary Accession	Q63633
Other Accession	NP_599190
Host	**Mouse**
Isotype	**IgG2a**
Reactivity	**Human, Mouse, Rat**
Clonality	**Monoclonal**

Description
Mouse Anti-Rat KCC2 Monoclonal IgG2a

Target/Specificity
Detects ~140kDa.

Other Names
Potassium Chloride Cotransporter Antibody, Potassium chloride transporter 5 Antibody, SLC12A5 Antibody, hKCC2 Antibody, S12A5 Antibody, Solute carrier family 12 member 5 Antibody, Electroneutral potassium-chloride cotransporter 2 Antibody, Furosemide-sensitive K-Cl cotransporter Antibody, K-Cl cotransporter 2 Antibody, rKCC2 Antibody, Neuronal K-Cl cotransporter Antibody, KIAA1176 Antibody, Electroneutral potassium chloride cotransporter 2 Antibody, Erythroid K Cl cotransporter 2 Antibody, Furosemide sensitive K Cl cotransporter Antibody, K-Cl cotransporter 2 Antibody, KCC 2 Antibody, Neuronal K Cl cotransporter Antibody, Solute carrier family 12 (potassium chloride transporter) member 5 Antibody, Solute carrier family 12 member 5 Antibody

Immunogen
Fusion protein amino acids 932-1043 corresponding to rat KCC2

Purification
Protein G Purified

Storage	**-20ºC**

Storage Buffer
PBS pH7.4, 50% glycerol, 0.09% sodium azide

Shipping Temperature	**Blue Ice or 4ºC**

Certificate of Analysis
1 µg/ml of SMC-392 was sufficient for detection of KCC2 in 10 µg of rat brain lysate by colorimetric immunoblot analysis using goat anti-mouse IgG:HRP as the secondary antibody.

Cellular Localization
Membrane

KCC2 Antibody - Protocols

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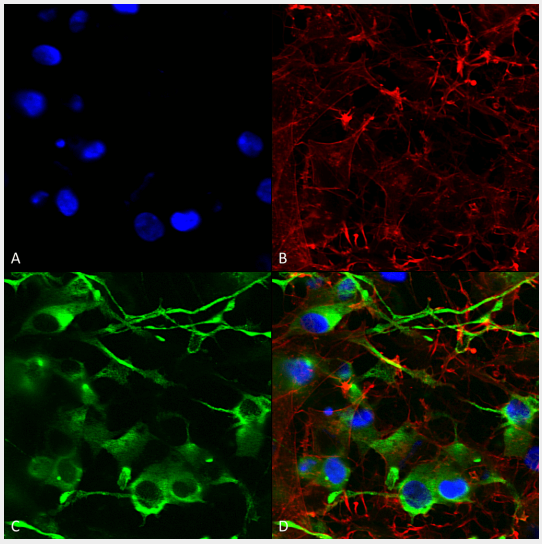
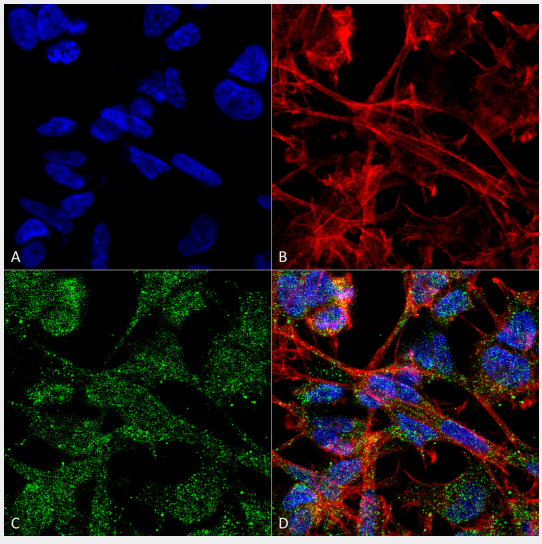
Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

KCC2 Antibody - Images



Immunocytochemistry/Immunofluorescence analysis using Mouse Anti-KCC2 Monoclonal Antibody, Clone N1/12 (ASM10226). Tissue: Neuroblastoma cells (SH-SY5Y). Species: Human. Fixation: 4% PFA for 15 min. Primary Antibody: Mouse Anti-KCC2 Monoclonal Antibody (ASM10226) at 1:200 for overnight at 4°C with slow rocking. Secondary Antibody: AlexaFluor 488 at 1:1000 for 1 hour at RT. Counterstain: Phalloidin-iFluor 647 (red) F-Actin stain; Hoechst (blue) nuclear stain at 1:800, 1.6mM for 20 min at RT. (A) Hoechst (blue) nuclear stain. (B) Phalloidin-iFluor 647 (red) F-Actin stain. (C) KCC2 Antibody (D) Composite.



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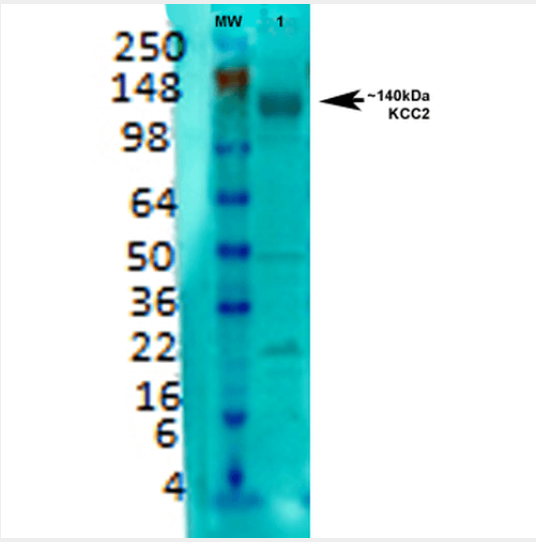
Immunocytochemistry/Immunofluorescence analysis using Mouse Anti-KCC2 Monoclonal Antibody, Clone N1/12 (ASM10226). Tissue: Neuroblastoma cell line (SK-N-BE). Species: Human. Fixation: 4% Formaldehyde for 15 min at RT. Primary Antibody: Mouse Anti-KCC2 Monoclonal Antibody (ASM10226) at 1:100 for 60 min at RT. Secondary Antibody: Goat Anti-Mouse ATTO 488 at 1:200 for 60 min at RT. Counterstain: Phalloidin Texas Red F-Actin stain; DAPI (blue) nuclear stain at 1:1000, 1:5000 for 60 min at RT, 5 min at RT. Localization: Membrane. Magnification: 60X. (A) DAPI (blue) nuclear stain. (B) Phalloidin Texas Red F-Actin stain. (C) KCC2 Antibody. (D) Composite.



Western Blot analysis of Rat brain membrane lysate showing detection of KCC2 protein using Mouse Anti-KCC2 Monoclonal Antibody, Clone N1/12 (ASM10226). Primary Antibody: Mouse Anti-KCC2 Monoclonal Antibody (ASM10226) at 1:1000.

KCC2 Antibody - Background

KCC2 is a member of the cation-chloride cotransporter gene family (1). It acts as a K-Cl cotransporter. KCCs normally lower intracellular chloride concentrations below the electrochemical equilibrium potential and depending on the chemical concentration gradients of potassium and chloride, KCC2 can operate as a net efflux or influx pathway. It is proposed to act as the main chloride extruder to promote fast hyperpolarizing postsynaptic inhibition in the brain (2, 3). KCC2 is expressed at high levels in neurons throughout the nervous system and immunofluorescence shows that the protein is localized at inhibitory synapses of the spinal cord (4). Studies in mice have shown that KCC2 reduces GABA's inhibitory signaling, resulting in motor defects, epilepsy, and anxiety-like behavior.

KCC2 Antibody - References

1. Lee L.H., Walker J.A., Williams J.R., Goodier R.J., Payne J.A., Moss S.J. (2007) J Biol Chem. 282(41): 29777-29784.
2. Watanabe M., Wake H., Moorhouse A.J., Nabekura J. (2009) J Biol Chem. 284(41): 27980-27988.
3. Gulyas A.I., Sik A., Payne J.A., Kaila K., Freund T.F. (2001) Eur J Neurosci. 13(12): 2205-2217.
4. Vinay L., Jean-Xavier C. (2008) Brain Res Rev. 57(1): 103-110.