

**KCC2 (D1R2R) Rabbit mAb**

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**For Research Use Only. Not for Use in Diagnostic Procedures.**

Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
W, IP, IF-F	H M R	Endogenous	130-260	Rabbit IgG	#Q9H2X9	57468

**Product Usage Information****Application**

Western Blotting  
Immunoprecipitation  
Immunofluorescence (Frozen)

**Dilution**

1:1000  
1:100  
1:100

**Storage**

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at -20°C. Do not aliquot the antibody.

For a carrier free (BSA and azide free) version of this product see product #56440.

**Specificity/Sensitivity**

KCC2 (D1R2R) Rabbit mAb recognizes endogenous levels of total KCC2 protein.

**Source / Purification**

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Ala970 of human KCC2 protein.

**Background**

The potassium/chloride cotransporter 2 (KCC2, SLC12A5) is a neuron-specific transport protein responsible for regulating the cotransport of potassium and chloride ions. KCC2 uses the energy of the electrochemical potassium gradient to export chloride ions from cells, therefore maintaining intracellular chloride ion concentrations in mature neurons (1,2). The intracellular concentration of chloride ions determines the neuronal response to the inhibitory neurotransmitter GABA and glycine. As a result, KCC2 can play a critical role in regulating neuronal excitability in mature central nervous system neurons (3-5). Altered KCC2 expression and reduced KCC2 activity can result in an increase in intracellular chloride ion concentrations and subsequent hyperexcitability of neuronal systems. Cases of aberrant KCC2 function are associated with neurological disorders, such as multiple forms of epilepsy, neuropathic pain, and schizophrenia (6-10).

**Background References**

1. Payne, J.A. et al. (1996) *J Biol Chem* 271, 16245-52.
2. Delpire, E. (2000) *News Physiol Sci* 15, 309-12.
3. Rivera, C. et al. (1999) *Nature* 397, 251-5.
4. Woo, N.S. et al. (2002) *Hippocampus* 12, 258-68.
5. Zhu, L. et al. (2005) *J Neurophysiol* 93, 1557-68.
6. Arion, D. and Lewis, D.A. (2011) *Arch Gen Psychiatry* 68, 21-31.
7. Hyde, T.M. et al. (2011) *J Neurosci* 31, 11088-95.
8. Kaila, K. et al. (2014) *Curr Opin Neurobiol* 26, 34-41.
9. Mòdol, L. et al. (2014) *Pain* 155, 1577-90.
10. Kahle, K.T. et al. (2014) *EMBO Rep* 15, 766-74.

**Species Reactivity**

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

**Western Blot Buffer**

**IMPORTANT:** For western blots, incubate membrane with diluted primary antibody in 5% w/v BSA, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

**Applications Key**

**W:** Western Blotting **IP:** Immunoprecipitation **IF-F:** Immunofluorescence (Frozen)

**Cross-Reactivity Key**

**H:** Human **M:** Mouse **R:** Rat

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