Revision 1

#14752 Store at -20C

Kv7.2 (D9L5S) Rabbit mAb

Cell Signaling TECHNOLOGY®

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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:
WB, IP	H M R	Endogenous	95	Rabbit IgG	#O43526	3785

Product Usage Information

Application	Dilution
Western Blotting	1:1000
Immunoprecipitation	1:50

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.

Specificity / Sensitivity

Kv7.2 (D9L5S) Rabbit mAb recognizes endogenous levels of total Kv7.2 protein. This antibody does not cross-react with Kv7.3 protein.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the amino terminus of human Kv7.2 protein.

Background

The voltage gated potassium channel Kv7.2 (KCNQ2) associates with its family member Kv7.3 (KCNQ3) to form an M-channel that is involved in synaptic input response and sub-threshold excitability of neurons (1). This heteromeric channel generates the M-current, a slowly activating and deactivating potassium conductance that determines the neuronal excitability (2,3). Expression of these two M-channel proteins is mainly seen within the central nervous system, with both Kv7.2 and Kv7.3 expressed post-synaptically in the human cortex and hippocampus (4). The calcium-binding protein calmodulin binds two separate sites in Kv7.2 to influence exit of the channel protein from the endoplasmic reticulum and translocation to the plasma membrane (5). Mutations in the corresponding *KCNQ2* gene cause benign familial neonatal seizures-1 (BFNS1), an autosomal dominant form of epilepsy characterized by seizure clusters closely following birth (6,7).

Background References

1. Stewart, A.P. et al. (2012) *J Biol Chem* 287, 11870-7.
2. Wang, H.S. et al. (1998) *Science* 282, 1890-3.
3. Smith, J.S. et al. (2001) *J Neurosci* 21, 1096-103.
4. Cooper, E.C. et al. (2000) *Proc Natl Acad Sci U S A* 97, 4914-9.
5. Alaimo, A. et al. (2013) *J Cell Sci* 126, 244-53.
6. Miraglia del Giudice, E. et al. (2000) *Eur J Hum Genet* 8, 994-7.
7. Dedek, K. et al. (2001) *Proc Natl Acad Sci U S A* 98, 12272-7.

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

WB: Western Blotting **IP:** Immunoprecipitation

Cross-Reactivity Key

H: human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster
X: Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse
GP: Guinea Pig **Rab:** rabbit **All:** all species expected

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