

#78889 Store at -20C

Nav1.7 (D5L1J) Rabbit mAb



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Applications:	Reactivity:	Sensitivity:	MW (kDa):	Source/Isotype:	UniProt ID:	Entrez-Gene Id:
WB, IP	H M R	Endogenous	250	Rabbit IgG	#Q15858	6335

Product Usage Information

Application

Western Blotting
Immunoprecipitation

Dilution

1:1000
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

Nav1.7 (D5L1J) Rabbit mAb recognizes endogenous levels of total Nav1.7 protein. This antibody also detects 50, 45, and 25 kDa bands of unknown origin.

Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human Nav1.7 protein.

Background

Voltage gated sodium channels are composed of a large alpha subunit and auxiliary beta subunits. The alpha subunit has 4 homologous domains, with each domain containing 6 transmembrane segments. These segments function as the voltage sensor and sodium permeable pore. Upon change of membrane potential, the sodium channel is activated, which allows sodium ions to flow through (1,2). When associated with beta subunits or other accessory proteins, the alpha subunit is regulated at the level of cell surface expression, kinetics, and voltage dependence (3,4).

There are 9 mammalian alpha subunits, named Nav1.1-Nav1.9 (5). These alpha subunits differ in tissue specificity and biophysical functions (6,7). Seven of these subunits are essential for the initiation and propagation of action potentials in the central and peripheral nervous system while Nav1.4 and Nav1.5 are mainly expressed in skeletal muscle and cardiac muscle (8,9). Mutations in these alpha channel subunits have been identified in patients with epilepsy, seizure, ataxia, sensitivity to pain, and cardiomyopathy (reviewed in 10).

The Nav1.7 alpha subunit (Nav1.7, SCN9A) plays an important role in nociception signaling and is essential for acute, inflammatory, and neuropathic pain perception (11,12). Mutations in the corresponding SCN9A gene are associated with primary erythralgia, autosomal recessive congenital indifference to pain, and paroxysmal extreme pain disorder (13-15). Mutations in SCN9A cause the GEFSP7 form of generalized epilepsy with febrile seizures, and are implicated in many cases of Dravet syndrome, a severe form of pediatric epileptic encephalopathy (16).

Background References

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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 nonfat dry milk, 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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