Store at -20°C

#13950

Na Channel β1 Subunit (D4Z2N) Rabbit mAb

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New 04/14

Entrez-Gene ID #6324
UniProt ID #Q07699

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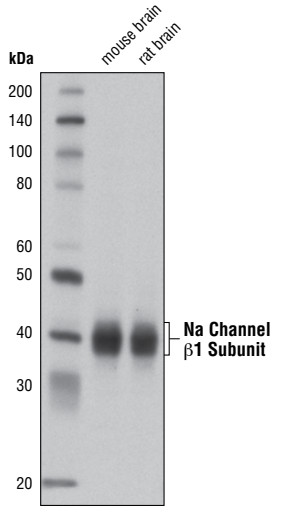
Applications	Species Cross-Reactivity*	Molecular Wt.	Isotype
W, IP Endogenous	H, M, R	38 kDa	Rabbit IgG**

Background: Mammalian voltage-gated sodium channels (VGSCs) are composed of a pore-forming α subunit and one or more regulatory β subunits (1). Four separate genes (SCN1B-SCN4B) encode the five mammalian β subunits β1, β1B, β2, β3, and β4. In general, β subunit proteins are type I transmembrane proteins, with the exception of secreted β1B protein (reviewed in 2). β subunits regulate α subunit gating and kinetics, which controls cell excitability (3,4). Sodium channel β subunits also function as Ig superfamily cell adhesion molecules that regulate cell adhesion and migration (5,6). Additional research reveals sequential processing of β subunit proteins by β-secretase (BACE1) and γ secretase, resulting in ectodomain shedding of β subunit and generation of an intracellular carboxy-terminal fragment (CTF). Generation of the CTF is thought to play a role in cell adhesion and migration (7,8). Multiple studies demonstrate a link between β subunit gene mutations and a number of disorders, including epilepsy, cardiac arrhythmia, multiple sclerosis, neuropsychiatric disorders, neuropathy, inflammatory pain, and cancer (9-13).

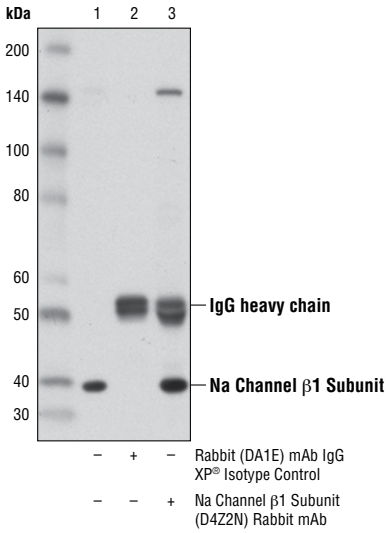
The sodium channel β1 subunit (SCN1B) plays a crucial role in neuronal migration and pathfinding during brain development (14). Mutations in the corresponding *SCN1B* gene are associated with generalized epilepsy with febrile seizures plus 1 (15), Brugada syndrome (16), and familial atrial fibrillation (17). A *SCN1B* loss of function mutation results in a severe form of pediatric epileptic encephalopathy known as Dravet syndrome (18).

Specificity/Sensitivity: Na Channel β1 Subunit (D4Z2N) Rabbit mAb recognizes endogenous levels of total sodium channel β1 subunit protein.

Source/Purification: Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues near the carboxy terminus of human sodium channel β1 subunit protein.



Western blot analysis of extracts from mouse and rat brain membrane using Na Channel β1 Subunit (D4Z2N) Rabbit mAb.



Immunoprecipitation of Na Channel β1 Subunit from MCF7 cell extracts using Rabbit (DA1E) mAb IgG XP® Isotype Control #3900 (lane 2) or Na Channel β1 Subunit (D4Z2N) Rabbit mAb (lane 3). Lane 1 is 10% input. Western blot analysis was performed using Na Channel β1 Subunit.

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.*

***Species cross-reactivity is determined by western blot.**

****Anti-rabbit secondary antibodies must be used to detect this antibody.**

Recommended Antibody Dilutions:

Western blotting	1:1000
Immunoprecipitation	1:50

For product specific protocols please see the web page for this product at www.cellsignal.com.

Please visit www.cellsignal.com for a complete listing of recommended complementary products.

Background References:

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

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