

SCN4A Antibody / Sodium channel protein type 4 subunit alpha Antibody (FY13517)

Catalog No.	Formulation	Size
FY13517	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

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Species Reactivity	Human, Mouse, Rat
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na ₂ HPO ₄ .
UniProt	P35499
Applications	Western Blot : 0.5-1ug/ml Immunofluorescence : 5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5 ug/ml
Limitations	For research use only, this SCN4A Antibody / Sodium channel protein type 4 subunit alpha Antibody is not intended for diagnostic or therapeutic use.

SCN4A Antibody by IF in human U2OS cells. Immunofluorescence staining of U2OS cells using Sodium channel protein type 4 subunit alpha Antibody shows green immunoreactivity outlining portions of the cytoplasm and cell periphery, with blue DAPI nuclear counterstaining. The cells underwent enzymatic antigen retrieval for 15 minutes, followed by blocking with 10% goat serum. Primary antibody was applied at 5 ug/mL overnight at 4°C, and fluorescence was detected using a green fluorophore-conjugated anti-rabbit secondary antibody at 1:500. The signal is distinguishable from the nuclear counterstain and illustrates SCN4A-associated labeling in fixed cells.

SCN4A Antibody by WB in human and rodent samples. Western blot analysis using Sodium channel protein type 4 subunit alpha Antibody shows high-molecular-weight immunoreactivity near 250-300 kDa in eight samples. Lanes 1-4 contain human K562, Jurkat, THP-1 and U2OS cell lysates, respectively; lanes 5-6 contain rat small intestine and heart; lanes 7-8 contain mouse small intestine and heart. Thirty ug of reduced protein was loaded per lane on an 8% gel. The primary antibody was used at 0.5 ug/mL overnight at 4°C, followed by HRP-based detection. Band intensity varies across samples, with a particularly strong signal in K562 and U2OS lysates.

SCN4A Antibody by FACS in U2OS cells. Flow cytometry of fixed U2OS cells using Sodium channel protein type 4 subunit alpha Antibody shows a blue fluorescence histogram shifted to the right of the green isotype control and red unstained blank. Cells were fixed with 4% paraformaldehyde, blocked with normal goat serum, and incubated with 1 ug primary antibody per 1×10^6 cells. A fluorescent anti-rabbit secondary antibody was used for detection. The separated populations demonstrate antibody-associated staining in fixed U2OS cells; the assay does not establish cell-surface labeling in live cells.

SCN4A Antibody by FACS in THP-1 cells. Flow cytometry of fixed THP-1 cells using Sodium channel protein type 4 subunit alpha Antibody demonstrates a blue antibody-stained population shifted rightward relative to the green rabbit IgG isotype control and red unstained blank. Cells were fixed with 4% paraformaldehyde and blocked with normal goat serum before incubation with 1 ug primary antibody per 1×10^6 cells. Fluorescence was detected with an anti-rabbit secondary antibody. The histogram documents SCN4A-associated staining in fixed THP-1 cells without establishing reactivity on the surface of viable cells.

Description

SCN4A Antibody / Sodium channel protein type 4 subunit alpha Antibody detects SCN4A, the pore-forming alpha subunit of the voltage-gated sodium channel Nav1.4, a membrane protein central to electrical excitation in skeletal muscle. Voltage-gated sodium channels open rapidly when the membrane depolarizes, allowing sodium ions to enter the cell and initiate the rising phase of an action potential. Nav1.4 is particularly important for the propagation of electrical signals along the muscle membrane and into the transverse tubule system. This electrical activity precedes calcium release from intracellular stores and ultimately enables muscle contraction.

The Nav1.4 alpha subunit contains four homologous domains, each with six transmembrane segments. Specialized voltage-sensing regions respond to changes in membrane potential, while the channel pore determines ion permeation. Rapid activation and inactivation allow the channel to support repeated electrical impulses without remaining continuously open. Channel behavior is also influenced by accessory proteins, membrane composition, and post-translational regulation. Even small changes in gating kinetics can alter the excitability of muscle fibers and the reliability of neuromuscular signaling. The Sodium channel protein type 4 subunit alpha Antibody designation reflects the full protein name associated with the SCN4A target.

Variants in SCN4A are associated with several inherited disorders of skeletal muscle excitability, including forms of myotonia, periodic paralysis, and congenital myasthenic syndrome. Depending on their functional effects, variants may increase persistent sodium current, impair channel availability, or disrupt normal electrical responsiveness. These contrasting mechanisms help explain why defects in one channel can produce stiffness, episodic weakness, or impaired muscle activation. The SCN4A Antibody from NSJ Bioreagents is associated with this well-characterized ion channel target. A SCN4A Antibody relates to the study of Nav1.4 abundance and the molecular regulation of skeletal muscle electrical activity.

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Application Notes

Optimal working dilutions for the SCN4A Antibody / Sodium channel protein type 4 subunit alpha Antibody should be established experimentally for each assay.

Immunogen

The SCN4A Antibody was generated using e. coli-derived human SCN4A recombinant protein (amino acids E35-S1788).

Storage

After reconstitution, keep the SCN4A Antibody at 4oC for up to one month. Alternatively, store aliquots at -20oC for up to six months. Avoid multiple freezing and thawing cycles.

Alternate Names

SCN4A antibody, Sodium channel protein type 4 subunit alpha antibody, sodium voltage-gated channel alpha subunit 4 antibody, SkM1 antibody, Sodium channel protein skeletal muscle subunit alpha antibody, Sodium channel protein type IV subunit alpha antibody, Voltage-gated sodium channel subunit alpha Nav1.4 antibody