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Product Information

Anti-Sodium Channel Na_v1.5 human

(SKM2, SCN5A)

produced in rabbit, affinity isolated antibody

Catalog Number **S1946**

Product Description

Anti-Sodium Channel Na_v1.5 human is developed in rabbit using a GST fusion protein with residues 1978-2016 of human Nav1.5 as the immunogen. This sequence has 36/39 residues identical in rat and 34/39 residues identical in mouse. The antibody was affinity isolated on immobilized immunogen.

Anti-Sodium Channel Na_v1.5 human specifically recognizes human-Nav1.5 transfected HEK-293 cells by immunoblotting.

Voltage-gated sodium channels (VGSCs) are present in most excitable cells. They play a crucial role in regulating the cell excitability, being primarily responsible for the initial depolarization phase of the action potential.¹ Muscle and nerve function cannot occur without them. There are 10 types of voltage-gated sodium channels, named for their α -subunits (Na_v1.1- Na_v1.9 and Na_x). They differ in structure, distribution, rate of inactivation and sensitivity to tetrodotoxin.²

The majority of Na⁺ channels in the mammalian heart are Tetrodotoxin (TTX)-insensitive Na_v1.5. They are responsible for myocardial conduction and maintenance of cardiac rhythm.³ Mutations in the C-terminus of Na_v1.5 were described in connection to Long QT syndrome and Brugada syndrome.⁴

TTX-resistant channels have been suggested to play an important role in nociceptive transmission.^{5,6} Two TTX-resistant Na_v channels, Na_v1.8 and Na_v1.9, are mainly expressed in small-diameter dorsal root ganglion (DRG) neurons, but have also been found in other areas. Involvement of Na_v1.8 in multiple sclerosis (MS) was suggested due to up-regulation of both mRNA and protein in Purkinje cells of MS patients, and also in animal models.⁷ Recently, it has been shown that BDNF activated Nav1.9 channels in the hippocampus suggesting that its expression is not restricted to DRG alone.⁸

Reagents

The antibody is supplied lyophilized from phosphate buffered saline, pH 7.4, with 1% bovine serum albumin, and 0.05 % sodium azide as preservative.

Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling.

Preparation Instructions

Reconstitute the lyophilized vial with 0.05 ml or 0.2 ml deionized water, depending on the package size purchased. Antibody dilutions should be made in buffer containing 1 % bovine serum albumin.

Storage/Stability

Lyophilized powder can be stored intact at room temperature for several weeks. For extended storage, it should be stored at -20 °C or below. The reconstituted solution can be stored at 2-8 °C for up to 2 weeks. For longer storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilution samples should be discarded if not used within 12 hours.

Product Profile

The recommended working dilution is 1:200 for immunoblotting.

Note: In order to obtain best results and assay sensitivities of different techniques and preparations, we recommend determining optimal working dilutions by titration test.

References

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8. Delmas, P. and Coste, B., Na⁺ channel Na_v1.9: in search of a gating mechanism, *Trends Neurosci.*, **26**, 55-57 (2003).

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