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ProductInformation

Anti-Sodium Channel PN4
produced in rabbit, affinity isolated antibody

Catalog Number **S0438**

Synonym: Anti-Sodium Channel Scn8a

Product Description

Anti-Sodium Channel PN4 ($Na_v1.6$) is produced in rabbit using as immunogen a synthetic peptide CIANHTGVDIHRNGDFQKNG corresponding to amino acids 1042-1061 of mouse or rat Scn8a.[1,2] The antibody was affinity isolated using immobilized immunogen.

Anti-Sodium Channel PN4 recognizes the Scn8a protein from rat brain by immunoblotting. The epitope corresponds to the intracellular loop between transmembrane domains 2 and 3 of Scn8a. The epitope is identical in the mouse and rat antigens and highly homologous (19 of 20 amino acids identical) in the human antigen.

Voltage-gated sodium channels composed of pore-forming α and auxiliary β subunits are responsible for the rising phase of the action potential in cardiac muscle, but their localizations have not yet been clearly defined. The brain α subunit isoforms Na(v)1.1, Na(v)1.3, and Na(v)1.6 are preferentially localized with β1 and β3 subunits in the transverse tubules, identified by immunostaining of α-actinin, a cardiac z-line protein. The β1 subunit is also present in a small fraction of intercalated disks. The recently cloned β4 subunit, which closely resembles β2 in amino acid sequence, is also expressed in ventricular myocytes and is localized in intercalated disks as are β2 and Na(v)1.5. The primary sodium channels present in ventricular myocytes are composed of Na(v)1.5 plus β2 and/or β4 subunits in intercalated disks and Na(v)1.1, Na(v)1.3, and Na(v)1.6 plus β1 and/or β3 subunits in the transverse tubules. Monovalent ion channels are being associated with a growing number of diseases.

Reagent

Supplied lyophilized from phosphate buffered saline, pH 7.4, containing 1% bovine serum albumin, and 0.05% sodium azide.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices

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 1-3% bovine serum albumin.

Storage/Stability

Store at –20 °C. For extended 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

Immunoblotting: a recommended working dilution of 1:200 is determined using peroxidase conjugated-goat anti-rabbit IgG and detection by chemiluminescence.

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

1. Burgess, D.L. et al., *Nature Gen.*, **10**, 461 (1995).
2. Tzoumaka, E. et al., *J. Neurosci. Res.*, **60**, 37 (2000).

3. Grosse, G. et al., *J. Neurosci*., **20**, 1869 (2000).
4. McFarlane, S. and Pollock, N.S., *J. Neurosci*., **20**, 1020 (2000).
5. Teschemacher, A.G. et al., *Br. J. Pharmacol*., **128**, 479 (1999).
6. Lehmann-Horn, F. and Jurkat-Rott, K., *Physiol. Rev*., **79**, 1317 (1999).
7. Meier, S. K. et al., *Circulation*, **109**, 1421-1427 (2004).

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