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Anti-Nav1.7 Antibody

Catalog # AP51860

Product Information

Application	WB, IHC
Primary Accession	Q15858
Reactivity	Human, Mouse, Rat, Mk
Host	Rabbit
Clonality	Polyclonal
Calculated MW	226372

Additional Information

Gene ID	6335
Other Names	NENA; Sodium channel protein type 9 subunit alpha; Neuroendocrine sodium channel; hNE-Na; Peripheral sodium channel 1; PN1; Sodium channel protein type IX subunit alpha; Voltage-gated sodium channel subunit alpha Nav1.7
Target/Specificity	KLH-conjugated synthetic peptide encompassing a sequence within the center region of human Nav1.7. The exact sequence is proprietary.
Dilution	WB~~WB (1/500 - 1/1000) IHC~~1:100~500
Format	Liquid in 0.42% Potassium phosphate, 0.87% Sodium chloride, pH 7.3, 30% glycerol, and 0.01% sodium azide.
Storage	Store at -20 °C.Stable for 12 months from date of receipt

Protein Information

Name	SCN9A (HGNC:10597)
Synonyms	NENA
Function	Pore-forming subunit of Nav1.7, a voltage-gated sodium (Nav) channel that directly mediates the depolarizing phase of action potentials in excitable membranes (PubMed:38381792, PubMed:40768348). Navs, also called VGSCs (voltage-gated sodium channels) or VDSCs (voltage-dependent sodium channels), operate by switching between closed and open conformations depending on the voltage difference across the membrane. In the open conformation they allow Na(+) ions to selectively pass through the pore, along their electrochemical gradient (PubMed:38381792, PubMed:40768348). The influx of Na(+) ions provokes membrane depolarization, initiating the propagation of electrical signals throughout cells and tissues (PubMed:15385606, PubMed:16988069, PubMed:17145499, PubMed:17167479, PubMed:19369487, PubMed:24311784,

PubMed:25240195, PubMed:26680203, PubMed:7720699). Nav1.7 plays a crucial role in controlling the excitability and action potential propagation from nociceptor neurons, thereby contributing to the sensory perception of pain (PubMed:17145499, PubMed:17167479, PubMed:19369487, PubMed:24311784).

Cellular Location

Cell membrane; Multi-pass membrane protein. Cell projection, neuron projection. Cell projection, axon. Note=Localizes to neuron terminals (PubMed:30765606, PubMed:30795902). Also detected at Nodes of Ranvier (PubMed:30795902).

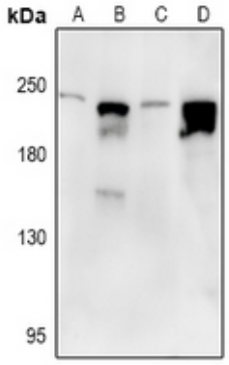
Tissue Location

Expressed strongly in dorsal root ganglion, with only minor levels elsewhere in the body, smooth muscle cells, MTC cell line and C-cell carcinoma. Also expressed in vagus nerves within the head and neck region (PubMed:31647222). Isoform 1 is expressed preferentially in the central and peripheral nervous system. Isoform 2 is expressed preferentially in the dorsal root ganglion

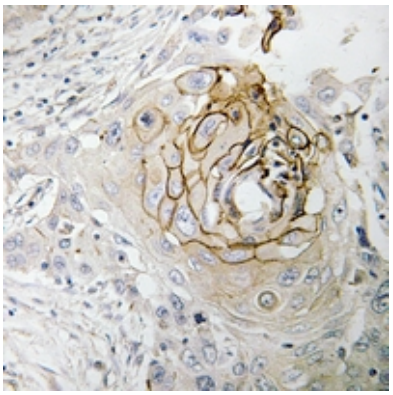
References

Klugbauer N.,et al.EMBO J. 14:1084-1090(1995).
Cox J.J.,et al.Nature 444:894-898(2006).
Hillier L.W.,et al.Nature 434:724-731(2005).
Raymond C.K.,et al.J. Biol. Chem. 279:46234-46241(2004).
Diss J.K.J.,et al.Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases.

Images



Western blot analysis of Nav1.7 expression in mouse testis (A), rat testis (B), HCT116 (C), A549 (D) whole cell lysates. (Predicted band size: 226 kD; Observed band size: 226 kD)



Immunohistochemical analysis of Nav1.7 staining in human lung cancer formalin fixed paraffin embedded tissue section. The section was pre-treated using heat mediated antigen retrieval with sodium citrate buffer (pH 6.0). The section was then incubated with the antibody at room temperature and detected using an HRP conjugated compact polymer system. DAB was used as the chromogen. The section was then counterstained with haematoxylin and mounted with DPX.

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