

## Product datasheet for **RR206256**

### Scn2a (NM\_012647) Rat Tagged ORF Clone

#### Product data:

Product Type:	Expression Plasmids
Product Name:	Scn2a (NM_012647) Rat Tagged ORF Clone
Tag:	Myc-DDK
Symbol:	Scn2a
Synonyms:	NachII; Nav1.2; RII/RIIA; RNSCPIIR; SCN; Scn2a1; Scn2a2; ScpII
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-Entry (PS100001)
E. coli Selection:	Kanamycin (25 ug/mL)
ORF Nucleotide Sequence:	>RR206256 representing NM_012647 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCC**CGATCGCC**

ATGGCACGGTCAGTGCTGGTACCTCCAGGACCTGACAGCTTCGGCTTCTTTACCAGGGAATCCCTTGCTG  
CTATCGAACAGCGCATTGCAGAAGAGAAAGCTAAGAGACCCAAACAGGAACGCAAGGACGAAGACGATGA  
AAATGGCCAAAGCCAAATAGTGACTTGAAGCAGGAAAATCCCTTCTTTATTTATGGAGACATTCT  
CCAGAGATGGTGTGACAACCACTGGAGGACCTGGACCCCTACTATATCAATAAGAAAACCTTTATAGTAT  
TGATAAGGGGAAAGCAATCTCGCGGTTACGCGCCACCTCTGCCCTGTACATTTAACTCCCTTCAACCC  
CATTAGAAAATTAGCTATTAAGATTTTGGTACATTCTTTATTCAATGTGCTTATCATGTGCACAATTCTT  
ACCAACTGTGTGTTTATGACCATGAGTAACCTCCAGACTGGACAAGAATGTGGAGTATACTTTTACAG  
GAATTTATACTTTGAATCACTTATTAATCCTTGCAAGGGGCTTTTGTCTAGAAGATTTACATTTCT  
ACGGAATCCCTGGAATTGGTTGGATTTACAGTCATTACTTTTGGCTATGTAACAGAATTTGAAACCTA  
GGCAATGTTTCAGCTCTTCGAACCTTCAGAGCTTGAGAGCTTTGAAAATTTCTGTAAATCCAGGCC  
TGAAGACTATCGTGGGGCCCTGATCCAGTCAGTGAAGAAGCTCTCTGACGTCATGATCCACCGTGT  
CTGTCTCAGTGTCTTTGCTCTAATCGGGCTGCAGCTCTCATGGCAACCTGAGGAATAAATGCTTGCAG  
TGGCCCCAGACAATTCTACCTTTGAAATAAATATCACTTCTTCTTTAATAACTATTGGATTGGAATG  
GTACTGCCTTCAATAGGACGGTGAACATGTTTAACTGGGACGAATATATTGAAGATAAAAAGTCACTTTTA  
TTTTTTGGAAGGACAAAACGATGCTCTGCTTTGTGGAAACAGCTCGGATGCTGGACAGTGTCCAGAAGGA  
TACATCTGTGTGAAGGCTGGGAGAAACCCCAACTACGGCTACACAAGTTTTGACACCTTCAGCTGGGCC  
TCTTGTCTTATTTGCTCTCATGACTCAAGACTTCTGGGAAAACCTTTATCAGCTGACCTTGCCTGCTGC  
CGGAAAACATACATGATATTTTTTGTGCTGGTCAATTTCTTGGGCTCATTCTACCTGATAAATTTGATC  
CTGGCTGTGGTGGCCATGGCCTACGAGGAACAGAACCAGGCCACACTGGAGGAGGCTGAACAGAAGGAGG  
CAGAGTTTCAGCAGATGCTGGAGCAACTGAAGAAGCAGCAGGAGGAAGCTCAGGCAGCAGCTGCAGCAGC  
GTCCGCAGAATCCAGAGACTTCAGCGGGCAGGCGGGATAGGTGTTTTCTCGGAGAGTTCGTCAGTAGCC



[View online »](#)

TCAAAGTTAAGTTCAAAAAGTAAAAAGGAGTTGAAAAACAGAAGAAAGAAAAAGAAACAGAAAGAACAGG  
CTGGGGAGGAAGAGAAGGAAGACGCGGTGCGGAAATCTGCCTCTGAGGACAGCATACGAAAGAAAGGCTT  
CCAGTTTTCCCTGGAAGGAAGTAGATTGACCTACGAGAAGAGATTTTCTCTCCGCACCAGTCTCTCTTG  
AGCATCCGAGGCTCCCTATTTTCTCAAAGACGCAACAGTAGAGCAAGCCTTTTCAACTTCAAAGGTGCGAG  
TGAAGGATATTGGTTCGAAAAATGACTTTGCAGACGATGAACACAGCACATTTGAGGACAACGACAGCAG  
AAGAGACTCTCTATTTGTACCACACAGACATGGAGAAAGGCGTCTAGCAATGTCAGCCAGGCCAGCCGT  
GCCTCCCGGGGATACCCACTACCCATGAATGGGAAGATGCACAGTGCAGTGGACTGCAACGGTGTGG  
TGTCCCTGGTTGGAGCCCTCTGCGCTCACATCGCCTGTGGGGCAGCTGCTGCCGAGGGCACAACATAC  
TGAGACAGAAATAGGAAGAGGAGATCCAGTCTTACCACGTCTCTATGGACTTGTGGAAGACCCTTCA  
AGGCAAAGGGCAATGAGTATGGCCAGTATTTGACGAACACTATGGAAGAAGTGAAGAATCCAGACAGA  
AATGCCACCCTGCTGGTATAAATTTGCTAATATGTGCCTGATTTGGGACTGTTGTAAGCCATGGCTAAA  
GGTAAAACACGTTGTCAATCTGGTAGTGATGGATCCATTTGTTGACCTGGCCATCACCATCTGCATTGTG  
TTAAATACGCTCTTCATGGCCATGGAGCACTACCCATGACTGAGCAGTTCAGCAGTGTGCTGTCTGTTG  
GGAATTTGGTCTTCACTGGGATCTTACGGCAGAAATGTTTCTCAAGATAATAGCCATGGATCCATATTA  
TTACTTCCAAGAAGGCTGGAATATCTTTGATGGCTTTATAGTGAGCCTTAGTTTAAATGGAAGTGGCTTG  
GGCAATGTGGAAGGATTGCAGTCTCCGATCATTCCGGCTGCTTAGAGTCTTCAAGTTGGCAAAGTCTCT  
GGCCACACTGAACATGCTCATTAAAGATCATCGGCAACTCGGTGGGTGCACTGGGCAACCTGACCCTGGT  
GCTGGCCATCATCGTCTTCAATTTTGGCGTGGTGGCATGCAGCTGTTTGGAAAGAGCTACAAGGAGTGT  
GTCTGTAAGATTTCCAATGATTGTGAGCTCCCGCGCTGGCAGATGCACCCTTCTTCCACTCCTTCTGTA  
TCGTGTTTCGAGTCTGTGTGGGAGTGGATAGAGACCATGTGGGACTGCATGGAGGTGCGGGGCCAGAC  
CATGTGCCTTACTGTCTTATGATGGTGTGGTATTGGGAACCTTGTGCTGAACTTCTTGGCC  
TTGCTCCTCAGTCTTTTACAGTACAGAACCTGGCTGCCACAGATGACGATAACGAAATGAACAACTCC  
AGATACCGGTGGGAAGGATGCAGAAGGGAATTGATTTTGTAAAAGGAAGATACGTGAATCAATTCAGAA  
AGCCTTTGTGAGAAAGCAGAAAGCTTTAGATGAAATCAAACCGCTGGAAGATCTGAATAACGAAGAAC  
AGTTGTATCTCCAACACACGACCATAGAAATAGGCAAGGACCTCAATTACCTCAAGATGGAAACGGGA  
CGACCAGTGGCATAGGCAGCAGTGTGGAGAAGTATGTGGTAGATGAGAGTGATTACATGTCGTTCAAAA  
CAACCCAGCCTCACCCTGACTGTGCCATCGCCCTTGGAGAGTCTGACTTTGAAAACCTTAAACACGGAA  
GAATTCAGTAGTGAGTACAGATATGGAAGAAAGCAAGGAGAAATGAAATGCAACTAGCTCATCTGAGGGCA  
GTACGGTTGATATAGGCGCTCCGGCAGAGGGAGAGCAGCCAGAGGCCGAACCGGAAGAATCGCTTGAACC  
GGAAGCGTGTTCACAGAAGACTGTGTGAGAAAGTTCAAGTGTGTCAGATAAGCATAGAAGAGGGCAA  
GGCAAGCTCTGGTGGAACTTGGGAAAACGTGCTACAAGATAGTAGAGCATAACTGGTTTGAACCTTCA  
TCGTTTTTATGATTCGCTCAGCAGTGGTGTCTGGCCTTTGAAGACATTTATATTGAGCAGCGAAAGAC  
CATCAAGACCATGCTGGAGTATGCTGACAAGGTTTTCACTTATATCTTATCCTGGAGATGCTTCTAAAG  
TGGGTGGCCTATGGTTTCCAAATGTATTTACCAATGCCTGGTGTGGCTGGACTTCTGATCGTTGATG  
TCTCCTTGGTTAGCTTAACTGCAATGCCTTGGGCTATTCCGAACTTGGTGCCATCAAGTCCCTCCGAAC  
GTTAAGAGCTCTGAGACCTTACGAGCCTTATCCCGATTTGAAGGAATGAGGGTGTGTGTAACGCTCTC  
TTAGGGCCATCCCTCCATAATGAACGTACTTCTGGTCTGCCTGATCTTTGGCTAATATTCAGTATCA  
TGGGGGTGAATCTCTTTGCTGGCAAGTTCTACCATTGCATCAACTACACCAGGGGAAATGTTTGTGATG  
GAGCGTGGTCAACAACACTACAGTGAATGCCAAGCTCTCATTGAGAGCAATCAGACGGCCAGGTGGAAGA  
GTGAAGGTCAACTTCGATAACGTGGGACTCGGATACCTTTCTCTGCTCCAAGTAGCCACCTTTAAAGGAT  
GGATGGATATCATGTATGCAGCTGTTGACTCAAGAAATGTAGAAGTGCAGCCAAATACGAAGACAACT  
CTACATGTACCTTACTTTGTCTCTTCTCATCTTCTCGGCTATTCTTACCCTGAACCTGTTTATTGGT  
GTCATCATAGACAACCTTCAACCAGCAGAAGAAGATTTGGAGGTCAAGACATCTTTATGACAGAAGAAC  
AGAAGAAATACTACAATGCAATGAAGAAGCTCGGCTCCAAGAAACCGCAGAAAGCCATTCTCGGCTGC  
AAACAAATTTCAAGGGATGGTCTTTGATTTTGAACCAACAAGTCTTTGACATCAGCATCATGATCCTC  
ATCTGCCTCAACATGGTGACCATGATGGTGGAAACGGACGACCAGAGTCAGGAGATGACCAACATCCTGT  
ACTGGATCAACCTGGTGTTCATTGTCTGTTTACGGGCGAGTGTGTGCTGAAGCTCATCTCCCTCCGCCA  
TTATTATTTACCATCGGCTGGAATATTTTGTATTTGTTGGTAGTCATCTCTCCATTGTAGGAATGTTT  
CTCGGGAGCTGATAGAGAAGTATTTCTGTGCCCTACCCTGTTCCGAGTCATCCGCTGGCCAGGATTG  
GACGAATCCTACGCTGATCAAAGGCGCAAGGGGATCCGCACTCTGCTCTTTGCTGATGATGTCCTT  
TCCTGCGCTGTTCAACATCGGCCCTGCTTTTCTGGTGTGTTTCTACGCACTCTTTGGGATGTCC  
AACTTTGCTACGTTAAGAGGGAAGTTGGAATTGATGACATGTTCAACTTTGAGACTTTTGGCAACAGCA

TGATCTGCCTGTTCCAAATCACCACCTCTGCCGGCTGGGACGGACTGCTGGCCCCATACTAAATAGCGG  
 ACCTCCTGACTGTGACCCGAAAAAGATCACCCCTGGAAGCTCGGTGAAGGGGGACTGTGGGAACCCATCT  
 GTGGGGATTTTCTTTTTGTGAGCTACATCATATCCTTCTGGTGGTGGTGAACATGTACATCGCTG  
 TCATCCTGGAGAACTTCAGCGTCGCCACCGAAGAAAGTGCAGAGCCTCTGAGTGAGGACGACTTTGAGAT  
 GTTCTACGAGGTCTGGGAGAAGTTCGACCCCTGACGCCACTCAGTTCATAGAGTTCGCAAGCTTTCTGAC  
 TTTGCAGCTGCCCTGGATCCTCCCCTCATCGCAAAGCCAAACAAAGTCCAGCTATTGCCATGGACC  
 TGCCCATGGTGGTGGAGACCGCATCCACTGCCCTGGACATCTTGTGTTTCTTTTACAAAGCGGGTCTGGG  
 CGAGAGTGGAGAGATGGACGCTCTTCAATCCAGATGGAAGAAAGTTTCATGGCTTCCAACCCCTCCAAG  
 GTCTCTTATGAGCCATTACCACCACCCTGAAACGGAAACAAGAGGAGGTGTCTGCTATTGTCATCCAGC  
 GAGCATACAGGCGGTATCTCCTGAAGCAGAAAAGTTAAGAAAAGTTTCGTCTATCTATAAAAAAGACAAAGG  
 TAAAGAAGACGAGGGAACGCCCATCAAAGAAGACATCATCACAGATAAACTGAACGAGAATCAACTCCA  
 GAGAAGACTGATGTGACACCTTCCACAACCTTCTCCACCTTCTACGATAGCGTGACGAAACCGGAGAAGG  
 AAAAATTTGAAAAGGACAAATCAGAAAAAGAGGACAAAGGAAAGATATCAGGAAAAGTAAAAAG

ACGCGTACGCGGCCGCTCGAGCAGAAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

**Protein Sequence:**

>RR206256 representing NM\_012647  
 Red=Cloning site Green=Tags(s)

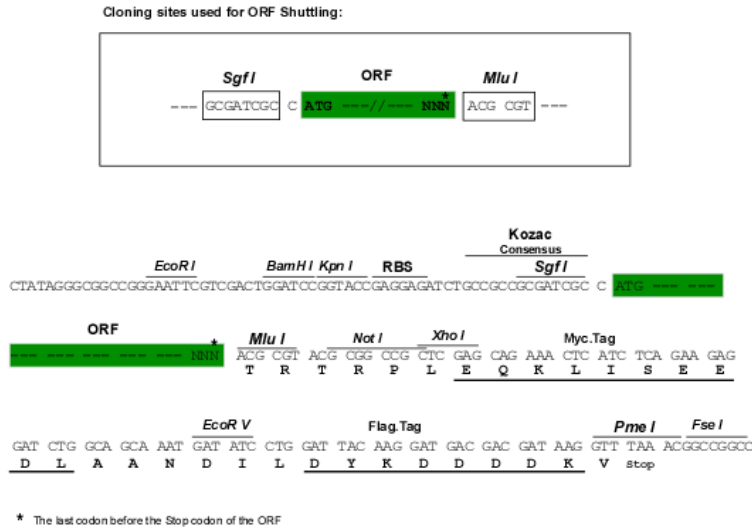
MARSVLVPPGPDSEFRFFTTRESLAAIEQRIAEKAKRPKQERKDEDDENGPKPNSDLEAGKSLPFIYGDIP  
 PEMVSEPLEDLDPYYINKKTFIVLNKGAISRFSATSALYILTPFNPIRKLAIKILVHSLFNVLIMCTIL  
 TNCVFMMSNPPDWTKNVEYTFGTIYTFESLIKILARGFCLEDFFLRNPWNWLDFTVITFAYVTEFVNL  
 GNVSALRTFRVLRALKTISVIPGLKTIVGALIQSVKKLSDVMILTVFCLSVFALIGLQLFMGNLRNKCLQ  
 WPPDNSTFEINITSFFNNSLDWNGTAFNRTVMFMNWEDEYIEDKSHFYFLEGQNDALLCGNSSDAGQCPEG  
 YICVKAGRNPNGYTSFDTFSWAFSLFRLMTQDFWENLYQLTLRAAGKTYMIFVFLVIFLGSFYLINLI  
 LAVVAMAYEEQNQATLEAEQKEAEFQQMLEQLKKQEEAQAASRAESRDFSGAGGIGVFSESSVA  
 SKLSSKSEKELKNRRKKKKQKEQAGEEKEKEDAVRKSASEDSIRKKGFQFSLEGSRLTYEKRFSSPHQSL  
 SIRGSLFSPRRNSRASLNFNFKGRVKDIGSENDFADEHSTFEDNDSRRDSLFPVPHRHGERRPSNVSQASR  
 ASRGIPTLPMNGKMHSAVDCNGVVSIVGGPSALTSPVQQLPEGTTEETEIRKRRSSSYHVSMDLLEDPS  
 RQRAMSMASILTNTMEELSESRQKCPWCYKFNAMCLIWDCCKPWLKVKHVNLVVMDFVDLAITICIV  
 LNTLFMAMEHYPMTEQFSSVLSVGNLVFTGIFTAEMFLKIIAMDPIYFQEGWNIQDFIVLSLMEGL  
 ANVEGLSVLRSFRLLRVFKLAKSWPTLNMLIKIIGNSVGLGNLTLVLAIVFIFAVVGMQLFGKSYKEC  
 VCKISNDCELPRWHMHFFHSFLIVFRVLCGEWIETMWDCEVAGQTMCLTVFMMVMVIGNLVVNLFLA  
 LLLSSFSDNLAATDDDNEMNQLIAGVGRMKGIDFVKKIREFIQKAFVRKQKALDEIKPLEDLNNKGD  
 SCISNHTTIEIGKDLNLYKDGNGTTSIGIGSSVEKYVVDSDYMSFINNPSLTVTVPIALGESDFENLNT  
 EFSSESDMEESKEKLNATSSSEGSTVDIGAPAEQEQAEPESLEPEACFTEDCVRKFKCCQISIEEGK  
 GKLVVNLKTKCYKIVEHNWFETIVFMILLSSGALAFEDIYIEQRKTIKTMLEYADKVFTYIFILEMLLK  
 WVAYGFQMYFTNAWCWLDLIVDVSLVSLTANALGYSELGAIKSLRTRLRALRPLRALSRFEGMRVVNAL  
 LGAIPSIMNVLLVCLIFWLIFSIMGVNLFAGKFYHCINYTTGEMFDVSVVNNYSECQALIESNQATARWKN  
 VKVNFNDVGLGYLSLLQVATFKGWMDIMYAAVDSRNLVLPKYEDNLYMYLYFVIFIIFGSFFTLNLFIG  
 VIIDNFNQKKKFGGQDIFMTEEQKKYNYAMKLGSKKPKPIPRPANKFQGMVDFVTKQVFDISIMIL  
 ICLNMVTMMVETDDQSQEMTNILYWINLVFIVLFTGECVLKILSLRHYFTIGWNIQDFVIVVILSIVGMF  
 LAELIEKYFVSPTLFRVIRLARIGRILRLIKGAKGIRTLFALMMSLPALFNIGLLLFLVMFIYAFGMS  
 NFAYVKREVGIDDMFNFTFGNSMICLFQITTSAGWDGLLAPILNSGPPDCPEKDHPGSSVKGDCGNPS  
 VGIFFFVSYIIISFLVVNMYIAVILENFVATEESAEPLEDDFEMFYEVWEKFDPDATQFIEFCKLSD  
 FAAALDPLLLIAKPNKVLIAMDLPMVSGDRIHCLDILFAFTKRVLGESGEMDALRIQMEERFMASNSK  
 VSYEPITTTLRKQEEVSAIIVIQRAYRRYLLKQKVKVSSYKDKGKEDEGTPIKEDIITDKLNENSTP  
 EKTDVTPSTTSPSPSYDSVTKPEKEKFEKDKSEKEDKGDIRESKK

TRTRPLEQKLISEEDLAANDILDYKDDDDKV

**Restriction Sites:**

Sgfl-MluI

Cloning Scheme:



ACCN: NM\_012647

ORF Size: 6015 bp

OTI Disclaimer: The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. [More info](#)

OTI Annotation: This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.

Components: The ORF clone is ion-exchange column purified and shipped in a 2D barcoded Matrix tube containing 10ug of transfection-ready, dried plasmid DNA (reconstitute with 100 ul of water).

Reconstitution Method:

1. Centrifuge at 5,000xg for 5min.
2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.
3. Close the tube and incubate for 10 minutes at room temperature.
4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.
5. Store the suspended plasmid at -20°C. The DNA is stable for at least one year from date of shipping when stored at -20°C.

RefSeq: [NM\\_012647.1](#), [NP\\_036779.1](#)

RefSeq Size: 8553 bp

RefSeq ORF: 6018 bp

Locus ID: 24766

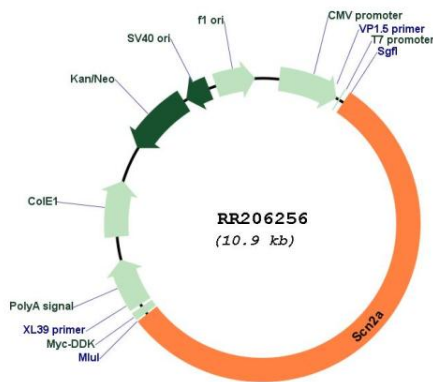
UniProt ID: [P04775](#)

**Cytogenetics:** 3q21

**MW:** 227.9 kDa

**Gene Summary:** Voltage-gated sodium channels are transmembrane glycoprotein complexes composed of a large alpha subunit with four repeat domains, each of which is composed of six membrane-spanning segments, and one or more regulatory beta subunits. Voltage-gated sodium channels are responsible for the generation and propagation of action potentials in neurons and muscle. This gene encodes one member of the sodium channel alpha subunit gene family. In humans, variants of this gene are associated with seizure disorders and autism spectrum disorder. Mice homozygous for a knockout mutation die with severe hypoxia and extensive neuronal cell death, while gain of function mutations result in progressive seizure disorder. [provided by RefSeq, Nov 2016]

**Product images:**



Circular map for RR206256