

Michael Boodoo

Gene: SCN5A-001 Sodium Gated Channel Type 5, Alpha Subunit

Human has 16 SCN5A Paralogs

>SCN5A_Human

MANFLLPRGTSSFRFTRESLAAIEKRMAEKQARGSTTLQESREGLPEEEAPRPQLDLQASKKLPDLYGN
PPQELIGEPLEDLDPFYSTQKTFIVLNKGKTIFRFSATNALYVLSPFHPIRRAAVKILVHSLFNMLIMCT
ILTNCVFMAQHDPWPWKYVEYTFITAIYTFESLVKILARGFCLHAFTFLRDPWNWLDVSVIIMAYVSENI
KLGNSALRTRFVRLALKTISVIPGLKTIVGALIQSVKKLADVMTVFLSVFALIGLQLFMGNLRHKC
VRNFTALNGTNGSVEADGLVWESLDLYLSDPENYLLKNGTSDVLLCGNSSDAGTCPEGYRCLKAGENPDH
GYTSFDSFAWAFLALFRLMTQDCWERLYQQTLRSAGKIYMIFFMLVIFLGSFYLVNLILAVVAMAYEEQN
QATIAETEEKEKRFQEAMEMLKKEHEALTIRGVDTVSRSSLEMSPLAPVNSHERRSKRRKRMSSGTEECG
EDRLPKSDESDGPRAMNHLSTRGLSRTSMKPRSSRGSIPTFRRRDLGSEADFADDENSTAGESESHHTS
LLVPWPLRRTSAQQQPSPGTSAPGHALHGKKNSTVDCNGVVSLGAGDPEATSPGSHLLRPVMLEHPPDT
TTPSEEPGGPQMLTSQAPCVDGFEEPGARQRALSASVSVLTSAL EELEESRHKCPPCWNRLAQRyliwECC
PLWMSIKQGKVLVMDPFTDLTITMCIVLNTLFMALEHYNMTSEFEMLQVGNLVFTGIFTAEMTFKIIA
LDPYFFQQGWNI FDSIIVILSLMELGLSRMSNLSVLRSFLLRVFKLAKSWPTLNTLIIGNSVGALG
NLTLVLAIVFIFAVVGMQLFGKNYSEL RDS SGLLP RWHMMDFFHAF LIIFRILCGEWIETMWDCMEVS
GQSLCLLVFLLVMVIGNLVVLNLFALLSSFSADNLTAPDEDREMNNLQLALARIQRGLRFVKRTTWDF
CCGLLRQRPQKPAALAAQGQLPSCIATPYSPPPPETEKVPPTRKETRFEEGEQPGQTPGDPEPVCVPIA
VAESDTDDQEEDEENSLGTEEESSKQ QESQPVSGGPEAPPDSRTWSQVSATASSEAEASASQADWRQQWK
AEPQAPGCGETPEDSCSEGSTADMTNTAELLEQIPDLGQDVKDPEDCFTEGCVRRCPCCA VDTTQAPGKV
WWRLRKTCYHIVEHSWFETFIIFMILLSSGALAFEDIYLEERKTIKVLLEYADKMFTYVFVLEMLLKWVA
YGFKKYFTNAWCWLDLIVDVSLVSLVANTLGFAEMGPIKSLRTLRLRPLRALS RFEGMRVVVNALVGA
IPSIMNVLLVCLIFWLIFSIMGVNLFAGKFGRCINQTEGDLPLNYTIVNNKSQCESLNLTGELYWTKVKV

NFDNVGAGYLALLQVATFKGWMDIMYAAVDSRGYEEQPQWEYNLYMYIYFVIFIIFGSFFTLNLFIGVII
DNFNQQKKKLGGQDIFMTEEQKKYYNAMKKLGSKKPQKPIRPLNKYQGFIDIVTKQAFDVTIMFLICL
NMVTMMVETDDQSPEKINILAKINLLFVAIFTGECIVKLAALRHYYFTNSWNIFDFVVVILSIVGTVLSD
IIQKYFFSPTLFRVIRLARIGRILRLIRGAKGIRTLLFALMMSLPALFNIGLLLFLVMFIYSIFGMANFA
YVKWEAGIDDMFNFQTFANSMLCLFQITTSAGWDGLLSPILNTGPPYCDPTLPNSNGSRGDCGSPAVGIL
FFTTYIIISFLIVVNMYIAIILENFSVATEESTEPLSEDDFDMFYEIWEKFDPEATQFIEYSVLSDFADA
LSEPLRIAKPNQISLINMDLPMVSGDRIHCMILFAFTKRVLGESGEMDALKIQMEEKFMAANPSKISYE
PITTTLRRKHEEVSAMVIQRAFRRHLLQRSLKHASFLFRQQAGSGLSEEDAPEREGLIAYVMSENF SRPL
GPPSSSSISSTSFPSPSYDSVTRATSDNLQVRGSDYSHSEDLADFPSPDRDRESIV

Human Paralog 1: SCN10A Ancestry: Amniota

>SCN10A_Human

MEFPIGSLETNNFRRFTPESLVEIEKQIAAKQGTTKAREKHREQKDQEEKPRPQLDLKACNQLPKFYGEL
PAELIGEPLEDLDPFYSTHRTFMVLNKGRTISRFSATRALWLFSPFNLRRTAIKVSVHSWFSLFITVTI
LVNCVCMTRTDLPEKIEYVFTVIYTFEALIKILARGFCLNEFTYLRDPWNWLDFSVITLAYVGTALDRG
ISGLRTRFVLRALKTVSVIPGLKVIVGALIHVKKLADVTILTIFCLSVFALVGLQLFKGNLKNKCVKND
MAVNETTNYSHRKPDYINKRGTSDLLCGNGSDSGHCPDGYICLKTSNPDNFNYTSFDSFAWAFLSLF
RLMTQDSWERLYQQTLRTSGKIYMIFFVLVIFLGSFYLVNLILAVVTMAYEEQNQATTDEIEAKEKKFQE
ALEMLRKEQEVLAALGIDTTSLSHNGSPLTSKNASERRHRIKPRVSEGSTEDNKSPRSDPYNQRRMSFL
GLASGKRRASHGSVFHFRSPGRDISLPEGVTDDGVFPGDHESHRGSLLLGGGAGQQGPLRSPPLQPSNP
DSRHGEDEHQPPPTSELAPGAVDVSAFDAGQKKTFLSAEYLDEPFRAQRAMS SVVSIITSVLEEELESEQK
CPPCLTSLSQKYLIWDCCPMWVKLTILFGLVTDPPFAELTITLCIVVNTIFMAMEHHGMSPTFEAMLQIG
NIVFTIFFTAEMVFKIIAFDPYFFFQKKWNIFDCIIVTVSLLELGVAKKGSLSVLRSFRLLRVFKLAKSW
PTLNTLIKIIGNSVGALGNLTIILAIIVFVFALVGKQLLGENYRNNRKNISAPHEDWPRWHMHDFHFSFL
IVFRILCGEWIENMWACMEVGQKSICLILFTVMVLGNLVVLNLFIALLLNSFSADNLTAPEDDGEVNNL
QVALARIQVFGHRTKQALCSFFSRSCPFPQKAEPELVVKLPSSSKAENHIAANTARGSSGGLQAPRGP
RDEHSDFIANPTVWVSVPIAEGESDLDLEDGGEDAQSFQQEVIPKGQQEQQLQQVERCGDHLPSPRPGT

GTSSEDLAPSLGETWKDESVPQVPAEGVDDTSSSEGSTVDCLDPEEILRKIPELADDLEEPDDCFTEGCI
RHCPCKLDTTKSPWDVGWQVRKTCYRIVEHSWFESFIIFMILLSSGSLAFEDYYLDQKPTVKALLEYTD
RVFTFIFVFEMLLKWVAYGFKKYFTNAWCWLDLIVNISLISLTAKILEYSEVAPIKALRTLRLALPLRA
LSRFEGMRVVVDALVGAIPSIMNVLLVCLIFWLIFSIMGVNLFAGKFWRCINYTDGEFSLVPLSIVNNKS
DCKIQNSTGSFFWVNVKVNFDNVAMGYLALLQVATFKGWM DIMYAAVDSREVNMQPKWEDNVYMYLYFVI
FIIFGGFFTLNLFVGVIIDNFNQKKKLGGQDIFMTEEQKKYYNAMKKLGSKKPQKPIPRPLNKFQGFVF
DIVTRQAFDITIMVLICLNMITMMVETDDQSEEKTILGKINQFFVAVFTGECVMKMFALRQYYFTNGWN
VFDFIVVLSIASLIFSAILKSLQSYFSPTLFRVIRLARIGRILRLIRAAKGIRTLLFALMMSLPALFNI
GLLLFLVMFIYSIFGMSSFPHVRWEAGIDDMFNQTFANSMCLCFQITTSAGWDGLLSPILNTGPPYCDP
NLPNSNGTRGDCGSPA VGIIFTTYIIISFLIMVNMYIAVILENFNVATEESTEPLSEDDFDMFYETWEK
FDPEATQFITFSALSDFADTL SGPLRIPKPNRNILIQMDLPLVPGDKIHCLDILFAFTKNVLGESGELDS
LKANMEEKFMATNLSKSSYEPIATTLRWKQEDISATVIQKAYRSYVLHRSMALSNTPCVPRAEEEEASLP
DEGFVAFTANENCVL PDKSETASATSFPPSYESVTRGLSDRVNMRTSSSIQNEDEATSMELIAPGP

Human Paralog 2: SCN11A-001 Ancestry: Amniota

>SCN11A-Human

MDDRCYPVIFPDERNFRPFTSDSLAAIEKRIAIQKEKKKSKDQTGEVPQPRPQLDLKASRKLPKLYGDIP
RELIGKPLEDLDPFYRNHKT FMVLNRKRTIYRFSAKHALFIFGPFNSIRSLAIRSVHSLFSMFIIGTVI
INCVFMATGPAKNSNSNNTDIAECVFTGIYIFEALIKILARGFILDEFSLRDPWNWLDSIVIGIAIVSY
IPGITIKLLPLRTFRVFRALKAISVVSRLKVIVGALLRSVKKLVNVIILTFCLSFALVGQQQLFMGSLN
LKCISRDCKNISNPEAYDHC FEKKENSPEFKMCGIWMGNSACSIQYECKHTKINPDYNYTNFDNFGWSFL
AMFRLMTQDSWEKLYQQTLRTTGLYSVFFFIVVIFLGSFYLINLTLAVVTMAYEEQNKNVAAEIEAKEKM
FQEAQQLLKEEKEALVAMGIDRSSLT SLETSYFTP KKRKLFGNKKRKSFFLRESGKDQPPGSDSDEDCQK
KPQLEQTKRLSQNLSLDHFDEHGDPLQRQRALS AVSILTITMKEQEQSQEPCLPCGENLASKYLVWNCC
PQWLCVKKVLRTVMTDPFTELAITICIIINTVFLAMEHHKMEASF EKMLNIGNLVFTSIFIAEMCLKIIA
LDPYHYFRRGWNIFDSIVALLSFADVMNCVLQKR SWPFLRSFRVLRVFKLAKSWPTLNTLIKIIGNSVGA
LGS�TVVLVIVIFISVVGMLFGRSFNSQKSPKLCNPTGPTVSCLRHWHMGDFWHSFLVVFRILCGEWI

ENMWECMQEANASSSLCVIVFILITVIGKLVVLNLFIALLLNSFSNEERNGNLEGEARKTKVQLALDRFR
RAFCFVRHTLEHFCHKWCRKQNLPPQKEVAGGCAAQSKDIPLVMMEMKRGSETQEELGILTSVPKTLGVR
HDWTWLAPLAEEDDVEFSGEDNAQRITQPEPEQQAYELHQENKKPTSQRVQSVEIDMFSEDEPHLTIQD
PRKKS DVTSILSECSTIDLQDGFGLPEMVPPKQPERCLPKGFGCCFPCCSVDKRKPPWVIWWNLRKTCY
QIVKHSWFESFIIFVILLSSGALIFEDVHLENQPKIQELLNCTDIIFTHIFILEMVLKWVAFGFGKYFTS
AWCCLDFIIVIVSVTTLINLMELKSFRTLRLRPLRLALSQFEGMKVVVNALIGAIPAILNVLLVCLIFWL
VFCILGVYFFSGKFGKINGTDSVINYTIITNKSQCESGNFSWINQKVNFDNVGNAYLALLQVATFKGWM
DIIYA AVDSTEKEQQPEFESNSLGYIYFVFIIFGSFFTLLNFIGVIIDNFNQQQKLGQDIFMTEEQK
KYYNAMKKLGSKKPQKPIRPLNKCQGLVFDIVTSQJFDIIISLIILNMISMMAESYNQPKAMKSILDH
LNWVFVIFTLECLIKIFALRQYYFTNGWNLFDVVLVLSIVSTMISTLENQEHIPFPPTLFRIVRLARI
GRILRLVRAARGIRTLLFALMMSLPSLFNIGLLLFLIMFIYAILGMNWFSKVPNPESGIDDIFNFKTFASS
MLCLFQJSTSAGWDSLLSPMLRSKESCNSSSENCHLPGIATSYFVSYIIISFLIVVNMYIAVILENFNTA
TEESEDPLGEDDFDIFYEVWEKFDPEATQFIKYSALSDFADALPEPLRVAKPNKYQFLVMDLPMVSEDRL
HCMDILFAFTARVLGGSDGLDSMKAMMEEFMEANPLKKLYEPIVTTTKRKEEERGAIIQKAFRKYMMK
VTKG DQGDQNDLENGPHSPLQTLCNGDLSSFGVAKGKVHCD

Human Paralog 3: SCN4A-201 Ancestry: Euteleostomy

>SCN4A_Human

MARPSLCTLVPLGPECLRPFTRESLAAIEQRAVEEEARLQRNKQMEIEEPERKPRSDLEAGKNLPMIYGD
PPPEVIGIPLEDLPYYSNKKTFIVLNKGKAIFRSATPALYLLSPFSVVRRGAIKVLIHALFSMFIMIT
ILTNCVFMTMSDPPPWSKNVEYTFGTGYTFESLIKILARGFCVDDFTFLRDPWNWLD FSVIMMAYLTEFV
DLGNISALRTRFVRLAKTITVIPGLKTIVGALIQSVKKLSVDMILTVFCLSVFALVGLQLFMGNLRQKC
VRWPPPFNDTNTTWYSNDTWYGNDTWYGNEMWYGNDSWYANDTWNSHASWATNDTFDWDAYISDEGNFYF
LEGSNDALLCGNSSDAGHCPEGYECIKTGRNPNYGYTSYDTFSWAFLALFRLMTQDYWENLFQLTLRAAG
KTYMIFVVIIFLGSFYLINLILAVVAMAYAEQNEATLAEDKEKEEEFQQMLEKFKKHQEELEKAKAAQA
LEGGEADGDPAHGKDCNGSLDTSQGEKGAPRQSSSGDSGISDAMEEEEAHQKCPPWWYKCAHKVLIWNC
CAPWLKFKNIIHLIVMDPFVDLGITICIVLNTLFMAMEHYPMTEHFDNVLTVGNLVFTGIFTAEMVLKLI

AMDPYEFQQGWNIFDSIIVTSLVELGLANVQGLSVLRSFRLRVFKLAKSWPTLNMLIKIIGNSVGAL
GNLTLVLAIIVFIFAVVGMQLFGKSYKECVCKIALDCNLPRWHMHDFHSLIVFRILCGEWIETMWDCM
EVAGQAMCLTVFLMVMVIGNLVVLNLFALLSSFSADSLAASDEDGEMNNLQIAIGRIKLIGFAKAFL
LGLLHGKILSPKDIMLSLGEADGAGEAGEAGETAPEDEKKEPPEEDLKKDNHILNHMGLADGPPSSLELD
HLNFINNPYLTIQVPIASEESDLEMPTEETDTFSEPEDSKKPPQPLYDGNSSVCSTADYKPPEEDPEEQ
AEENPEGEQPEECFTEACVQRWPCLYVDISQGRGKKWWTLRRACFKIVEHNWFETFIVFMILLSSGALAF
EDIYIEQRRVIRTILEYADKVFTYIFIMEMLLKWVAYGFKVYFTNAWCWLDLIVDVSIIISLVANWLGYS
ELGPIKSLRTLRLRPLRALSREFGMRVVVNALLGAIPSIMNVLLVCLIFWLIFSIMGVNLFAGKFYYCI
NTTTSERFDISEVNNKSECESLMHTGQVRWLNVKVNYDNVGLGYLSLLQVATFKGWMDIMYAAVDSREKE
EQPQYEVNLYMYLYFVIFIIIGSFFTLNLFIGVIIDNFNQKKKLGGKDIFMTEEQKKYYNAMKKLGSKK
PQKPIPRPQNKIQGMVYDLVTKQAFDITIMILICLNMVTMMVETDNQSQLKVDILYNINMIFIIIFTGEC
VLKMLALRQYYFTVGWNIFDFVVVILSIVGLALSDLIQKYFVSPTLFRVIRLARIGRVRLIRGAKGIRT
LLFALMMSLPALFNIGLLLFLVMFIYSIFGMSNFAYVKKESGIDDMFNFETFGNSIICLFEITTSAGWDG
LLNPILNSGPPDCDPNLENPGTSVKGDCGNPSIGICFFCSYIIISFLIVVNMYIAIILENFNVATEESSE
PLGEDDFEMFYETWEKFDPDATQFIAYSRLSDFVDTLQEPLRIAKPNKIKLITLDLPMVPGDKIHCLDIL
FALTKEVLGDSGEMDALKQTMEEKFMAANPSKVSYPEITTTLKRKHEEVCAIKIQRAYRRHLLQRSMKQA
SYMYRSHSDGSGDDAPEKEGLLANTMSKMYGHENGSSSPSPEEKGEAGDAGPTMGLMPISPSDTAWPPA
PPPGQTVRPGVKESLV

Human Paralog 4:SCN8A-001 Ancestry: Vertebrata

>SCN8A_Human

MAARLLAPPGPDSFKPFTPESLANIERRIAESKLKPPKADGSHREDEDSKPKPNSDLEAGKSLPFIYG
DIPQGLVAVPLEDFDPYYLTQKTFVVLNRGKTLFRFSATPALYILSPFNLIRRIAIKILHSVFSMIIMC
TILTNCVFMFTSNPPDWSKNVEYFTFTGIYTFESLVKIIARGFCIDGFTFLRDPWNWLD FSVIMMAYITEF
VNLGNVSALRTFRVLRAKLTISVIPGLKTIVGALIQSVKKLSDVMILTVFCLSVFALIGLQLFMGNLRNK
CVVWPINFNESYLENGTKGFDWEEYINNKTNFYTVPGMLEPLLCGNSSDAGQCPEGYQCMKAGRNPNYGY
TSFDTFSWAFLALFRLMTQDYWENLYQLTLRAAGKTYMIFVVLVIFVGSFYLVNLILAVVAMAYEEQNQA

TLEEAQEKEAEFKAMLEQLKKQEEAQAAAMATSAGTVSEDAIEEEGEEGGSPRSSEISKLSSKSAKE
RRNRKRKRKQKELSEGEEKGDPEKVFKESEDGMRRKAFRLPDNRIGRKFSIMNQSLLSIPGSPFLSRHN
SKSSIFSFRGPGRFRDPGSENEFADDEHSTVEESEGRDLSLFIPIRERERRSSYSGYSQGSRSSRIF
PSLRRSVKRNSTVDCNGVVSLIGGPGSHIGGRLLPEATTEVEIKKKGPGSLLVSMQDLASYGRKDRINSI
MSVVTNTLVEELEESQRKCPPCWYKFANTFLIWECHPYWIKLKEIVNLIVMDPFVDLAITICIVLNTLFM
AMEHHPMTPQFEHVLAVGNLVFTGIFTAEMFLKLIAMDPIYYYFQEGWNIFDGFIVSLSLMELSLADVEGL
SVLRSFRLLRVFKLAKSWPTLNMLIKIIGNSVGALGNLTLVLAIVFIFAVVGMQLFGKSYKECVCKINQ
DCELPRWHMHDFHSLIVFRVLCGEWIETMWDCMEVAGQAMCLIVFMMVMVIGNLVVLNLFALLSSF
SADNLAATDDDGEMNNLQISVIRIKKGAWTKLKVHAFMQAHFKQREADEVKPLDELYEKKANCIAHNTG
ADIHRNGDFQKNGNGTTSIGISSVEKYIIDEDHMSFINNPNLTVRVPIAVGESDFENLNTEDVSSESDPE
GSKDKLDDTSSEGSTIDIKPEVEEVPEQPEEYLDPDACFTEGCVQRFKCCQVNIEEGLGKSWWILRKT
CFLIVEHNWFETFIIFMILLSSGALAFEDIYEQRTIRTILEYADKVFTYIFILEMLLKWTAYGFVKFF
TNAWCWLDLIVAVSLVSLIANALGYSELGAIKSLRTLRLRPLRALS RFEGMRVVVNALVGAIPSIMNV
LLVCLIFWLIFSIMGVNLFAGKYHYCFNETSEIRFEIEDVNNKTECEKLMEGNNTAIRWKNVKINFDNVG
AGYLALLQVATFKGWMDIMYAAVDSRKPDEQPKYEDNIYMYIYFVIFIFGSFRTLNLFIGVIIDNFNQQ
KKKFGGQDIFMTEEQKKYYNAMKKLGSKKPQKPIRPLNKIQGIVDFVTQQAFDIVIMMLICLNMVTMM
VETDTQSKQMENILYWINLVFVIFFTCECVLKMFALRHYFTIGWNIFDFVVVILSIVGMFLADIIEKYF
VSPTLFRVIRLARIGRILRLIKGAKGIRTLFALMMSLPALFNIGLLLFLVMFIFSIFGMSNFAYVKHEA
GIDDMFNFETFGNSMICLFQITTSAGWDGLLLPILNRPPDCSLDKEHPGSGFGDCGNPSVGIFFFVSYI
IISFLIVNMYYIAIILENFSVATEESADPLSEDDFETFYEIWEKFDPDATQFIEYCKLADFADALEHPLR
VPKPNTIELIAMDLPMVSGDRIHCLDILFAFTKRVLGDSGELDILRQQMEERFVASNPSKVSYPEITTL
RRKQEEVSAVVLQRAYRGHLARRGFICKKTSNKLENGTHREKKESTPSTASLPSYDSVTKPEKEKQQR
AEEGRRERAKRQKEVRESKC

Human Paralog 5: SCN2A-201 Ancestry: Vertebrata

>SCN2A_Human

MAQSVLVPPGPDSFRFFTTRESLAAIEQRIAEKAKRPKQERKDEDDENGPKPNSDLEAGKSLPFIYGDIP

PEMVSVPLEDLDPYYINKKTFIVLNKGKAISRFSATPALYILTPFNPIRKLAIKILVHSLFNMLIMCTIL
TNCVFM TMSNPPDWTKNVEYTFTGIYTFESLIKILARGFCLEDFTFLRDPWNWLDFTVITFAYVTEFVNL
GNVSALRTFRVLRALKTISVIPGLKTIVGALIQSVKKLSDV MILTVFCLSVFALIGLQLFMGNLRNKCLQ
WPPDNSSFEINITSFFNNSLDGNGTTFNRTVSIFNWDEYIEDKSHFYFLEGQNDALLCGNSSDAGQCPEG
YICVKAGRNP NYGYTSFDTFSWAFLSLFRLMTQDFWENLYQLTLRAAGKTYMIFFLVIFLGSFYLINLI
LAVVAMAYEEQNQATLEEAQEKEAEFQQMLEQLKKQQUEEAQAAAAAASAESRDFSGAGGIGVFSESSVA
SKLSSKSEKELKNRRKKKKQKEQSGEEKNDRVRKSESEDSIRRKGFRFSLEGSRLTYEKRFS SPHQSL
SIRGSLFSPRRNSRASLSFRGRAKDIGSEND FADDEHSTFEDNDSRRDSL FVPHRHGERRHSNVSQASR
ASRVLPILPMNGKMHS AVDCNGVVS LVGGPSTLTSAGQLLPEGTTTETEIRKRRSSSYHVSM D LLEDPTS
RQRAMSIASILTNTMEELEESRQKPPCWYKFANMCLIWDCKPWLVKHLVNLVVMDFVDLAITICIV
LNTLFMAMEHYPMTEQFSSVLSVGNLVFTGIFTAEMFLKIIAMDPYYYFQEGWNIFDGFIVSLSLMELGL
ANVEGLSVLRSFRLLRVFKLAKSWPTLNMLIKIIGNSVGALGNLTLVLAIVFIFAVVGMQLFGKSYKEC
VCKISNDCELPRWHMHDFHSLIVFRVLCGEWIETMWDCMEVAGQTMCLTVFMMVMVIGNLVVLNLFLA
LLSSFSNDLAATDDDNEMNNLQIAVGRMQKGIDFVKRKIREFIQKAFVRKQKALDEIKPLEDLNNKKD
SCISNHTTIEIGKDLNYLKDGNGTTSGIGSSVEKYVVDESDYMSFINNPSLTVTVPIAVGESDFENLNT
EFSSSDMEESKEKLNATSSSEGSTVDIGAPAEGEQPEVEPEESLEPEACFTEDCVRKF KCCQISIEEGK
GKLWWNLRKTCYKIVEHNWFETFIVFMILLSSGALAFEDIYIEQRKTIKTMLEYADKVFTYIFILEMLLK
WVAYGFQVYFTNAWCWLD FLIVDVSLVSLTANALGYSELGAIKSLRTLRLRPLRALS RFEGMRVVVNAL
LGAIPSIMNVLLVCLIFWLIFSIMGVNLFAGKFYHCINYTTGEMFDVSVVNNYSECKALIESNQ TARWKN
VKVNF DN VGLGYLSLLQVATFKGWMDIMYAAVDSRNVELQPKYEDNLYMYLYFVIFIIFGSFTLNLFIG
VIIDNFNQKKKFGGQDIFMTEEQKKYYNAMKKLGSKKPQKPIPRPANKFQGMVFDVTKQVFDISIMIL
ICLNMVTMMVETDDQSQEMTNILYWINLVFIVLFTGECVLKLISLRYYYFTIGWNIFDFVVVILSIVGMF
LAELIEKYFVSPTLFRVIRLARIGRILRLIKGAKGIRTLLFALMMSLPALFNIGLLLFLVMFIYAIFGMS
NFAYVKREVGIDDMFNFETFGNSMICLFQITTSAGWDGLLAPILNSGPPDCDPDKDHPGSSVKGDCGNPS
VGIFFFVSYIIISFLVVVNMYIAVILENFSVATEESAEPLEDDFEMFYEVWEKFDPDATQFIEFAKLS
FADALDPPLLIAPKNKVQLIAMDLPMVSGDRIHCLDILFAFTKRVLGESGEMDALRIQMEERFMASNPSK
VSYEPITTTLRKQKEEVSIIIQRAYRRYLLKQKVKKVSSIIYKKDKGKECDGTPIKEDTLIDKLNENSTP
EKTDMTPTTSPPSYDSVTKPEKEKFEKDKSEKEDKGKDIRESKK

Human Ortholog 1: Anole Lizard SCN5A-201 which is 1-to-1 with Human SCN5A. Has 12 paralogs unlike human which has 16.

>SCN5A_Anole_Lizard

MAIKYIIKDSNINSLHFFLP SQALARGIDSISLSSFEMSPLASKISKERRSRRRRKKS
SGAEDDGEDQKGPKSESE DGQRRMTVLGFTSGSMENSVKRKASHGVSFRLRSRDIGSE
ADFADDDISTVGESESQRGSLVPRNGRRLSVQSQASHSSPNYTHNGKRNSSVDCNGVVS
LIGGGGSPDPTPTDVLPPVTMDKPGTDETTSPSEEVIKKQFLTPQRISVDQPEEHFQR
QRAVSAVSIITSAMEELESQQKCPCWNHFALRFLIWECCPMWLLIKEIKIYIIMDPFS
DLTITLCIVMNTLFMAMDHYKMTKEFEDVLNIGNLIFTGIFTTEMICKVIALHPYYYFQQ
GWNIFDSIIVTLSLMELSSMGNVSVLRSFRLRVFKLAKSWPTLNTLIIGNSVGAL
GNLTVVLAIVFIFAVVGMQLFGDMYCKNVNKISTTGELPRWHMKDFFHSFLIIFRILCG
EWIETMWDCMRVNGQPLCLLVFLLVMVIGNLVVLNLFALLSSFSADNLSAPDEDGEMN
NLQLAFARINRGLNHAKRAMWDFCCHVLRQPKATAENSVKGRPAHARASCWPPPPSSFM
VKPVTSRIRYESRSPACKATGNSSPKLSPLAILQRETNYQEENKDITLGSTEESDTQES
KPPISDRQQPPMGQRYRSPAVRSQASEICEELSELNTDKQTKTDPPLPSVGQEEKFDEIS
LSEGSTVDLAIPDLLEQMPELAEEMMEPEGCFPEQCLQNCPQSVGSHLMLPHNLCWKRL
KKVLFSIPKMSWWPCSFKA WLLHARLLKTFLKAFEDIYLEERKNIKTMLEYADKIFTYI
FVLEMLLKWVAYGFKKYFTNAWCWLD FLIVDVSLVSLVASTLG YSEIGPIKSLRTLRLR
PLRALS RFEGMRVVVNALVGAIPSIMNVLLVCLIFWLIFSIMGVNLFAGKFGKCINKTEG
DEPLNNTIVDNMTECQSLNETGELYWTKVRVNF DN VGAGYLALLQVATFKGWMEIMYAAV
DSREREQQPVWEANLYMYLYFVIFIIFGSFFTLNLFIGVII DN FNQQKKKLGGQDIFMTE
EQKKYYNAMKKLGSKKPQKPIRPLNRFQGFIFDCVLNQAFDVCIMLLICLNMITMMVET
DDQSPEKVNILYKINMVFAIFTAECISKLVALRHYYFTNGWNIFDFVVVILSIVGSVLS
DIIQKYFFSPTLFRVIRLARIGRILRLIRGAKGIRTLLFALMMSLPALFNIGLLLFLVMF
IYAIFGMANFAYVKHEHGIDDMFNFQTFANSMLCLFQITTSAGWDGLLHPILNTGPPYCD
PSHQNANGSKGNCGSPAVGILFFVTYIIISFLIVVNMYIAIILENFSVATEESTEPLSED

DFDMFYEIWEKFDPEATQFIEYSALS NFADALSEPLRIAKPNKIKLIAMDLP MVSGDRIH
CLDILFAFTKRVLGESGEMDAL KIQMEEKFMAANPSKISYEPITTTLR RKHEEVSA LIQ
RAYRSHLFQRSLKQASFLYRQQACNLGDDAPEKEGLIASMMSENYGRPIDKSETLSSTSF
PPSYDSVTRGTSDNFQLRLTDSSKSDLEDALSPDRDKESIV

Anole Lizard SCN5A Paralog 1: SCN10A-201 Ancestry: Amniota

>SCN10A_Anole_Lizard

KMDDLTL LGANNFR RFTHE SLATIQKRIA AKKESKDILLRDKLRPQLDLQAFQKLPALYG
NLPPELIGE PLEDLPYYNDHKT F MVLNKGKAI FRFTATRALWIFSPFHPIRRLAIKILL
SLLTLFTMFIMVTIFTNCVFM TLES ES PQSGTNETSSSKYVEFTFTGIYTFECLIKILARG
FCLNEFTFLRDPWNWLD FSVIMMAYIGAFIDLGNVSVLRMFRVLRALKTISVIPGLKVIV
GALIQSIKKLADV MILTVFCLSVFALIGLQLFKGHLRHKCVKNYTD RHGQTSALQVFWTT
TPTIPKHLQCPNNYILKNDTEDYLLCSNSSDGGSCPRHSVCLKVGGNPDYGFTSFDTFGW
AFLSLFRLMTQDYWERLYQQTLRASGKIYMLFFMLVIFLGSFYLVNLILAVVTMAYEEQS
KATIAETEAKERKFREAMEMLKKEQEDLAAKENDSM SHSSFDVSPIASKEVKERSNRMKK
LSLGMEDYGEEQKTPQSYSSESHQKLAVLTHSYAPSSNPAKRRPSHG SVFNHVP RTEFG
EDDSSSAGEMESH RGLLATRMGRRPSIQSQASYSSRPGTPNYMMPGRWSTGDECNGPIS
LMGSSGVRPLKEPISGEGALLPPVMENPGKGDLNPSYDEAKKMLQSHRLSVDHYNRPLQR
QRAASAVSIITSVLEELEESNQRCPPFLKKLAFRYLVWECCPMWMKIKKKVSIFVMDPFT
DLTITLCIVINTLFMALEHYKMTPGFKLMLSIGNKIFTGIFTAEVILKIIAMD PYYYYFQQ
SSNIFDSIVVFISIIELSIPSEPQKADKGKRGGKKGFTVLR TLRLLRVFKLAKSWPTLN
TLIKIILNSINALSNLTLVLALIVFIFAVFGMQLFGNSYRLGRCNITSTCKPRWHMEDFF
HSFLVIFRILCGEWIETMWGCMVVAEPPLCLFVFLSVMVIGNLVVLNLFIALLLNSFSAD
NLTQLPEEDRETNNLKIACARIHRGLQGAKQWMLTFCFAFGYKKKAAQKKIKCDTEKNG
LELTKEGLHSNEKYSNGGNEKMGEKYSMNNILDDYIRNPSVFVSVPIAHGESDSGSEDA
ADKQD TVIETDPTKQQENQLRLRGERMKNSDAWSRASETSSPGELSIQWKAGSSSSKLKE
ADV TSCSEGSTIDIPDPDEF LKNIPELAEDSKEPDNCFPERFTRHYPWC SVNTTKFPGRM

CWNLRKTCYQIVEHNWFESFIVFMILLSSGALAFEDIYLTEKPRIKMMLEYADKIFTYIF
ILEMLLKWVAYGFHKYFTNAWCWLDLIVDVSLVSLVASLAGKSEIGAMKSLRTLRLALRP
LRALSRFEGMRVVVNALLGAIPSIMNVLLVCLIFWLIFSIVGVSLFAGKFGKCINMTEAN
STINDALIKTMADCRKVNNTQQRLYWTTVKVNFNDNVGSGYLSLLQVATFKGWMDIMYAA
VDSVDTERQPQWESNKYMYLYFVIFIFGSFFTLNLFVGVIIDNFNQKKKFGGEDIFMT
EEQKKYYNAMKKLGSKKPQKPIPRPLNKYQGFIFDIATHQAFDISIMVLICLNMVTMMVE
ADEQSAEKTYVLSKINVLFITIFTAECVMKLVALRYYYFTNGWNIFDLVVVIMSIVGSVL
SGIVVSFSPTLFRVIRLVRIGRILRLIRSARGIRTLLFALMMSLPALFNIGLLLFLVMFI
YAIFGMANFAHVKMEVGIDDMFNFKTFGNSMLCLFQITTSAGWAEELLSPILNTGPPFCDP
NPVSQRGDCGNPALGIMFFVYIIITFLIVVNMYIAVILENFNVATEESTEPLGDDDFEM
FYEVWEKFDPLATQFIPYAKLSDFANTLAAPLRIPKPNKLELITMDLPMVSGDRIHCLDI
LFAFTKRVLGDSGEMDTLKVQMEEKFMAANPSKSSYEPINTTLQRKYEEMAAVTLQRAFR
SHLLQRSMKQASFLHRQKTSDDILEEDAPEKEGLIAHLMNENYITSPDKTRTPSLESIP
PSYHSVTGTLGDGAEGETSKALKHEEPRDGHLSPRKDKESNM

Anole Lizard SCN5A Paralog 2: SCN4A-201 Ancestry: Euteleostomy

>SCN4A_Anole_Lizard

MAPPPIPPGPDSLRRRLTRESIVEIEKRFAEEEEAKKLKPPEETLEEVVERKPRSDLEQGKS
LPLIYGDPPPELLGVALEELDPFYSDKKTYILLSKGKTIFRFSTTPALYMLDPFNIVRRG
AIQVLIHSLFSMFIMITILTNCVFMAMSNPPSWAKNVEYFTFTGIYTFESTIKILARGFCV
DSFTFLRDPWNWLDLFSVIVMAYLTEFVDLGNVSALRTFRVLRALKTITVIPGLKTIVGAL
IQSVKKLSDVMILTVFCLAVFALIGLQLFMGNLRQKCVRWPPFTNDTLEEDFFGLESNST
LYDNFGNSTLYDNDTLTSNFTFDWDEYIHNEENFYFLDGALDALLCGNSSDAGQCPEGYQ
CMKAGRNPNGYTSYDTFSWAFLALFRLMTQDYWENLFQLTLRAAGKTYMIFFVLVIFLG
SFYLINLILAVVAMAYDEQNQQTMLEEQEKEAEFQQMMEQLKKHQEEQERLLQEAAANSS
STESIIVKNKGESDQEGHSDQDGPKDCNRPAIPRLVRLERSATVDESDSMEEHEKSDQNHL
QVNTGLEKRAGSALSIVSNTMEELEEHAHQKCPPWWYKFANAVLVWNCCPFVVKLKHILKL

IVMDPFVDLGITICIVLNTVFMAMEHYPMTEEFNNVLTVGNLVFTGIFTAEMVLKLIALD
PYEYFQVGWNIFDSIIVTSLVELALANVQGLSVLRSFRLMRVFKLAKSWPTLNMLIKII
GNSVGALGNLTLVLAIIVFIFAVVGMQLFGKSYIECVCKISSDCELPRWHMHDFHSLI
VFRILCGEWIETMWDCMEVAGQTLCLIVFMMVMVIGNLVVLNLFALLSSFSADSLAGS
DEDGEMNNLQIAIARITRGIDYVKKHVLLLLHRELKQKTEPPAEEQDDSKKENFVLNHTD
TGQDFKLEIMDGMPPKKEGQGKFSEFMDGLSKNDSQDFRSDYMDGIRRKEPFIDELEQMNF
INNPNTIHVPIASEESDLYDETDGEEAEETKETKKFLSDGTESSICSTVDYKPPDPM
EEEAAVEEAVENDEPEECFTEACVQRCPLYVDIKTEKGQKWWNLRKTCFKIVEHNWFET
FIIFMILLSSGALAFEDIYIERRPVIRTILEYADKVSFYFVIEMLLKWWAYGFKVYFTN
AWCWLDLFLVDVSLISLTANWMGYSELGPIKSLRTLRLRPLRALS RFEGMRVVVNALLG
AIPSIMNVLLVCLIFWLIFSIMGVNLFAGKYRCVNTTTGELFEISEINNKSDCMNLINI
ENATDVRWLNVKVNFNVLGLGYLSLLQVATFKGWMDIMYAAVDSREVEEQPQYEINLYMY
IYFVVFIIFGAFTLNLFIGVIIDNFNQKKKFGGKDIFMTEEQKKYYNAMKKLGSKKPV
KPIPRPQNKYQGMIFDFVTQQAFDIVIMILICLNMVTMMVETDDQSQTIDILFQINLIF
IVIFTTECFMKIALRYFFTVGWNIFDFVVILSIAGLVLSDLIEKYFVSPTLFRVIRL
ARIGRVLRLIRGAKGIRTLFALMMSLPALFNIGLLLFLVMFIFSIFGMSNFAYVKKESG
IDDMFNFETFGNSIICLFMITTSAGWDGLLNPILNSAPPDCDPDLENPGSDVKGNCGNPG
VGICFFCTYIIVSFLIVVNMYIAIILENFNVATEESSEPLCEDDFEMFYETWEKFDPDAT
QFIDYSILSEFADTLQEPLRIAKPNKIKLVTLDLPMVPGDKIHCLDILFALTKEVLGDSG
EMDALKESMEEKFMAANPSKVSYPITTTLRKHHEEVCATKIQRAFRRYLLRRSVKQASY
VYRHSQDEDTLAEGAPEKEGLIANRINTLYGSSEMQMENEISPEASPIELEPIPSSENT
QDTGETKEKEEPEKTTEDASSKTQEPKATKRGVKESFV

Anole Lizard SCN5A Paralog 3: SCN8A-201 Ancestry: Vertebrata

>SCN8A_Anole_Lizard

MAGRLLAPPGPDSFRPFTPESLANIEKRIAEEKKKKRPKQEGSHRDDDEESKPKPNSDLE
AGKSLPFIYGDIPKGLVAVPLEDFDPYYMTEKTFVVLNRGKTLFRFSATPALYILSPFNL

FRRIAIKILIHSLFSMIIMCTILTNCVFMFMSNPPEWSKQVEYFTFTGIYTFESLVKIIAR
GFCIDGFTFLRDAWNWLD FSVIMMAYVTEFVDLGNVSALRTRFVLRALKTISVIPGLKTI
VGALIQSVKKLSVDMILTVFCLSVFALIGLQLFMGNLRNKCVIWPIDLNETYLENGTKGF
DWEEYSNNNSNFYTIPGFLDLLCGNSSDAGQCPEGYTCMKAGRNPNGYTSFDTFSWAF
LALFRLMTQDFWENLYQLTLRAAGKTYMIFVVLVIFVGSFYLVNLILAVVAMAYEEQNQA
TLEAEQKEAEFKAMLDQLKKQQEEAQAAAMATSAGTVSEDAIEEEGEGGGRMSQSSEV
SKLSSSAKERRNRRKKRKQKELSEGEEKGDAEKVFKSESEDGMRRKVFRLPDNRLGRKL
SIMNQSL SIPGSPYLSRHNSKSSIFSFKRGFRDPGSENEFADDEHSTVEESEGRDLSL
IPIRGHDRKSSYSGYSGYSQGSRSSRIFPSIRRNVKRNSTVDCNGVVS LIGGPTSNLPSG
RLLPEVKIDKAATDDSGTTEVEIKKKATGSLLVSMDQLNASYGRKDRTNSIMTVITNTLV
EELEESQRKCPPCWYKFANVVLWECHPYWLKLKEIVNLVMDPFVDLAITICIVLNTLF
MAMEHHPMTPAFEHVLAVGNLVFTGIFAAEMFLKLIAMPYFFFQEGWNIFDGFIVLSL
LEMLADVEGLSVLRSFRLLRVFKLAKSWPTLNMLIKIIGNSVGALGNLTLVLAIIVFIF
AVVGMQLFGKSYKECVCKINPDCELPRWHMNDFFHSFLIVFRVLCGEWIETMWDCMEVAG
QAMCLIVFMMVMVIGNLVVLNLFLALLSSFSADNLAATDDDGEMNNLQISVIRIKKGIA
WAKIKVHELVTQTHFKKREADEVKPLDELYDKKMNCIANHMGADINREIDYQKNGNGTTS
IGSSVEKYIIDEDHMSFINNPNLTVRVPIAVGESDFENLNTEDFSSDTPDGSKEKLDDT
SSSEGSTIDIKPEAEVPEAPEEYLDPDACFTEGCVQKFCCQVSIEEGHGKSWWNLRK
TCFLIVEHNWFETFIIFMILLSSGALAFEDIYIEQRKTIRTCLYADKVFTYIFILEMLL
KWCAYGFVKFFTNAWCWLDLIVAVSLVSLIANALGYSELGAIKSLRTLRLRPLRLSR
FEGMRVVVNALVGAIPSIMNVLLVCLIFWLIFSIMGVNLFAGKYHYCFNETAEYRFEIEE
VNNETDCFKLMEPNSTEIRWKNVKINFDNVGAGYLALLQVATFKGWMDIMYAAVDSRRQN
EQPKYEDNIYMYIYFVIFIIFGSFFTLNLFIGVIIDNFNQKKKFGGQDIFMTEEQKKYY
NAMKKLGSKKPQKPIRPLNR IQGSVFDFVTQQAFDILIMLLICLNMVTMMVETDTQSKQ
MEEILYWINLVFVIFFTCECVLKMFA LRHYFTIGWNIFDFVVVLSIVGMFLAEIIEKY
FVSPTLFRVIRLARIGRILRLIKGAKGIRTL LFALMMSLPALFNIGLLLFLVMFIFSIFG
MSNFAYVKHEAGIDDMFNFETFGNSMICLFQITTSAGWDGLLL PILNGPPDCDPDKEHPG
SGFTGDCGNPSVGIFFFVSYIIISFLIVVNMYIAIILENFSVATEESADPLEDDFETFY

EIWKFDPDATQFIEYCKLADFADALEHPLRVKPKNTIELIAMDLPMVSGDRIHCLDILF
AFTKRVLGDSGELDILRQQMEERFVASNPSKVSYPEITTTLRKQEEVSALVIQRAYRAR
LVRRGFIYRKNVSNKMENGGTNREKKEGTPSTASLPSYDSVTKPEKEKQRAEEGRERAR
RQ

Anole Lizard SCN5A Paralog 4: SCN2A-201 Ancestry: Vertebrata

>SCN2A_Anole_Lizard

MLIMCTILTNCVFM TMSNPPEWTKNVEYFTFTGIYTFESLIKILARGFCLEGFTFLRDPWN
WLDFTVITFAYVTEFVDLGNVSALRTRFVLRALKTISVIPGLKTIVGALIQSVKKLSDVM
ILTVFCLSVFALIGLQLFMGNLRHKCLIWPPDNSTFEINITSYFDSTAGENGTYVNTTVT
TFNWA EYVSDDNNFYFLEGQNDALLCGNGSDAGQCPEGYMCVKAGRNP NYGYTSFDTFSW
AFLSLFRLMTQDYWENLYQLTLRAAGKTYMIFFFLVIFLGSFYLINLILAVVAMAYEEQN
QATMEEAEQKEAEFQQMLEQLKKQEEAQAAALAAAAD E SREFSDVGGVGGFSESSATS
KLSSSAKERRNRRKKRKQREQSEGDEKDEDEFHKSESEDSIRRKGFRFSIEGNRLTYEK
RFSSPHQSLLSIRGSLFSPRRSSKASLFSFRGRAKDIGSEND FADDEHSTFEDNESRRDS
LFVPHRHGERRNSNISQASRSSRMVPVLPANGKMHSTVDCNGVVSLVGGPPVLMSP TGQL
LPEGTTTETELRKRSSSYHMSMDFLSDPTARQRAMS IASILTNTMEELEESRQKCPPCW
YKFANMCLIWDCCDPWLKVKHVVNLIVMDPFVDLAITICIVLNTLFMAMEHYPMTPQFNN
VLSVGNLVFTGIFTAEMFLKLIAMDPYYYFQEGWNIFDGIIVSLSLMELGLANVEGLSVL
RSFRLLRVFKLAKSWPTLNMLIKIIGNSVGALGNLTLVLAII VFIFAVVGMQLFGKSYKE
CVCKISNDCELPRWHMNDFFHSFLIVFRVLCGEWIETMWDCMEVAGQTMCLTVFMMVMVI
GNLVVLNLF LALLSSFSSDNLAATDDD NEMNNLQIAVGRIQRGIDYVKKVREFVQKAF
VRKQKALDEIKPLEDLNNKKDSCISNHTIVDIGKDFNYLKDGN GTTSGIGSSVEKYIIDE
SDYMSFINNP SVTVTVPIAVGESDFENLNTEEFSS ESDLEESKEKLNATSSSEGSTVDVG
VPQVG EQPEAEPEESLEPEACFTEGCMRKFECCRVSVEDGKGKKWWNL RKT CYKIVEHNW
FETFIVFMILLSSGALAFEDIYIEQRKTIKTMLEYADKVFTYIFILEMLLKWVAYGFQMY
FTNAWCWLDFLIVDVSLISLTANALGYSELGAIKSLRTLRLALRPLRALS RFEGMRVVVNA

LLGAIPSIMNVLLVCLIFWLIFSIMGVNLFAGKFYHCINTTTGEMFSIDEVDNQTCHEEL
IERNETARWKNVKVNFNDNVGLGYLSLLQVATFKGWMDIMYAAVDSRNVEKQPHYEDNLYM
YLYFVIFIIFGSFFTLNLFIVIIDNFNQKKKFGGQDIFMTEEQKKYYNAMKKLGSKKP
QKPIPRPANKFQGMVDFVTKQAFDISIMILICLNMVTMMVETDDQTDAMETNLYRINLI
FIVLFTGECVLKLISLRYYYFTIGWNIFDFVVVILSIVGMFLAEIIEKYFVSPTLFRVIR
LARIGRILRLIKAGKIRTLLFALMMSLPALFNIGLLLFLVMFIYAIFGMSNFAYVKREV
GIDDMFNFETFGNSMLCLFQITTSAGWDGLLAPILNSGPPDCDPEIDHPGSSVKGDGCGNP
SVGIFFVFSYIIISFLVVVNMYIAVILENFSVATEESAEPLEDDFEMFYEVWEKFDPPDA
TQFIEFCKLSDFAAASLDPPLLIAKPNKVQLIAMDLPMVSGDRIHCLDILFAFTKRVLGES
EEMDLLRVQMEDRFMQANPSKASYEPITTTLKRKQEEVSAVIIQRAFRSYLLRQKVKKVS
SLFNKDRIKAGGDTHIKEDMIIDKLNENSTPEKNDMTPSTTSPPSYDSVTKPDKEYEKD
KSEKEDKGKDSRDSKK

Anole Lizard SCN5A Paralog 5: SCN3A-201 Ancestry: Vertebrata

>SCN3A_Anole_Lizard

MAQALLVPPGPDSFRYFTRESLAAIEKRCAEEKAKKPKQDHSADDENGPKPNSDLEAGK
TLPFIYGDIPPGMVSEPLEDLPYYSNKKTFIVLNKGKAIFRSATSALYILTPFNPLRK
IAIKILVHSLFSMLIMCTILTNCVFMMSNPPDWTKNVEYFTFTGIYTFESLIKILARGFC
LEGFTFLRDPWNWLD FSVIVMAYVTEFVN LGNV SALRTFRVLRALKTISVIPGLKTIVGA
LIQSVKKLSDVMILTVFCLSVFALIGLQLFMGNLRQKCLIWPLDNSAFEINITSYFNSTA
GENGTFINTTVS NFDWEQYIEDESHFYTLEGQRDALLCGNSSDAGQCPEGYTCVKAGRNP
NYGYTSFDTF SWAFLSLFRLMTQDYWENLYQLTLRAAGKTYMIFVFLVIFLGSFYLINLI
LAVVAMAYEEQNQATMEEAEQKEAEFQQMLEQLKKQEEAQTTAAVAAASVASRDFSGVG
GLGELLETSSEVSKLSTKSAKERRNRRKKRRQKELAEAEEREEMETFPKSESEDSIRREA
RLSYEKRSSTHQSLLSLRGSLFSPRRNSRASIFSFRGRAKDVGSEND FADDEHSTLEDNE
NRRDSLFPNHRHNSERRNSNTSQASLSSKMVPSLPLNGKMHSTVDCNGVVSLMGGLTSLP
SPTGQLLPEGTTTETEIRKRRSSYQISMELMEESAARQRAMSIASILTNTMEELEESRQ

KCPPCWYRFANTYLIWDCWRPWLVKVKHIVNLIVMDPFVDLAITICIVLNTLFMAMEHYPM
THYFNHVLVGNLVFTGIFTAEMVLKIIAMDPPYYFQEGWNIFDGIIVSLSLMELGLANV
EGLSVLRSFRLLRVFKLAKSWPTLNMLIKIIGNSVGALGNLTLVLAIVFIFAVVGMQLF
GKSYKECVCKIAEDCELPRWHMNDFFHSFLIVFRVLCGEWIETMWDCMEVAGQTMCLIVF
MLVMVIGNLVVLNLFALLSSFSNDLAATDDDNEMNNLQIAVGRIQRGIDYIKKKMQE
LVQKSVIRKQKATGDIKALEELNKKEIYISNHTMVEITKDVHYLRDGNNGTSGVGTGSSV
EKYMMDENDYMSFINNPGLTDTVPIAAGESDFENINTEEFSSSDLGESKEKINATSSSE
GSTVDIAPPGEGEQAEIEPEEALPEACFTEGCIKKFPCCQVSIEDGKGKIWWNFRKTCY
SIVEHNWFETFIVFMILLSSGALAFEDIYIEQRKTIKTMLEYADKVFTYIFILEMLLKWV
AYGFQMYFTNAWCWLDLIVDVSLVSLVANALGYSELGAIKSLRTLRLRPLRLSRFEG
MRVVVNALVGAIPSIMNVLLVCLIFWLIFSIMGVNLFAGKFYHCVNTTTGEMFNISEVDN
KTQCDDLVSRLDARWKNVKVNFNDVAAGYLALLQVATFKGWMDIMYAAVDSRDVEEQPH
YEDNLYMYLYFVFIIFGSFFTNLNFIGVIIDNFNQKKKFGGQDIFMTEEQKKYYNAMK
KLGSKKPQKPIPRPGNKFQGMVDFVTKQAFDISIMILICLNMVTMMVETDDQSKEMETI
LSRINLVFIILFTGECVLKLTSLRHYYFTIGWNIFDFVVLISIVGMFLAEIIEKYFVSP
TLFRVIRLARIGRILRLIKGAKGIRTLFALMMSLPALFNIGLLLFLVMFIYAIFGMSNF
AYVKREVGIDDMFNFETFGNSMLCLFQITTSAGWDGLLAPILNSGPPDCDPEIDHPGSSV
KGDGCGNPVGIFFFVSYIIISFLVVVNMYIAVILENFSVATEESAELSEDDFEMFYEVW
EKFDPDASQFIEYSKLSDFAAASLDPPLLIPKPNHVQLIAMDLPMVSGDRIHCLDILFAFT
KRVLGESEEMDLLRVQMEDRFMQANPSKVSYPEITTTLKRKQEEVSATVIQRTFRRFLK
QKVQVQVTSLFNKKDKCKDGDILPIKDMIIDKFNGNSTPEKTDESSSTSPPSYDSVTKPDK
EKYKKGKGD RDYKGDVRASKK

Human Ortholog 2: Bushbaby SCN5A-201 which is 1-to-1 with Human SCN5A. Has 16 paralogs like humans

>SCN5A_Bushbaby

MANFLLPRGTSSFRFTRESLAAIEKRMVEKQARGSATSQESRDGLPEEEAPRPQLDLQA

SKKLDPDLYGNPPRELIGEPLEDLDPFYSTQKTFIVLNKGKTIFRFSATNALYVLSPFHPI
RRAAVKILVHSYPLHMLIMCTILTNCVFMAQHDPWPWKYVEYFTAIYTFESLVKILAR
GFCLHAFTFLRDPWNWLDVSVIVMAYTTEFVDLGNVSALRTRVLRALKTISVISGLKTI
VGALIQSVKKLADVMLVTVFCLSVFALIGLQLFMGNLRHKCVRNFTELNGTNGSVEADGL
VWESLDDYLNNPENYLLKNGTSDVLLCGNSSDAGTCPEGYRCLKAGENPDHGYSFDSFA
WAFALFRLMTQDCWERLYQQTLRSAGKIYMIFFMLVIFLGSFYLVNLILAVVAMAYEEQ
NQATIAETEEKEKRFQEAMEMLKKEHEALIIRSVDTMSRSSLEMSPLAPVTSHERRSKRR
KRMSSGTEECGEDRFPKSDSEDGPRAMNRLSLTHGLSRTSMKPRSSRGSIPTFRRRDLGS
ETDFADDENSTAGESDSHRTSLLVPWPLRRPSAQQQSPGTSAPGHALNGKRNSTVDCNG
VVSLLGAGDPETISPGSRLHPMMLERPPDTTTPSEEPGGPQMLTPQAPCMDGFEEPGAR
QRALSAVSVLTSALEEEESHKRCPPCWNRFQAQRYLIWECCPLWLSIKQKVKFLVTDPA
DLAITMCIVLNTLFMALEHYNMTAEFESMLQVGNLVFTGIFTAEMTFKIIALDPYYYFQQ
GWNIFDSIIVILSLMELGLSRMNNLSVLRSFRLLRVFKLAKSWPTLNTLIIGNSVGAL
GNLTLVLAIIVFIFAVVGMQLFGKNYSEQRHLISDSGLLPRWHMMDFFHAFLIIFRILCG
EWIETMWDCMEVSGQSLCLLVFLLVMVIGNLVVLNLFALLSSFSADNLTAPDEDEGEMN
NLQLALARIHRGLCFVKRTTWDFCCGLRRRPQKPAALASRSQLPSCIGTPGSPPPEME
KAPPARKETRFEVVKQPGQGTGDPPEPVCVPIAVAESDQDDQEEDEENSLGTEEESSKQQ
ESQPVSGGPEASPEPRTWSQVSETASSEAEASESQADWQQQKAHQASGCSETQEDSYS
EGSTADMTNTADLLEQIPDLGEDVKDPEDCFTEGCVRRCPCCAVIDTTQAPGKVVWRLRKT
CYRIVEHSWFETFIIFMILLSSGALAFEDIYLEDKTVKVLLEYADKMFTYVFLVLEMLLK
WVAYGFKKYFTNAWCWLDLFLIVDVSLISLVANTLGFAEMGPIKSLRTLRLRPLRALSFR
EGMRVVVNALVGAIPSIMNVLLVCLIFWLIFSIMGVNLFAGRFGRGINQTEGDLPLNYTI
VNNKSECESFNVTGELYWTKVKNFDNVGAGYLALLQVATFKGWMDIMYAAVDSRGYEEQ
PQWEYNLYMYIYFVIFIFGSFFTLNLFIVGIIDNFNQKKKLGGQDIFMTEEQKKYNA
MKKLGSKKPQKPIRPLNKYQGFLDIVTKQAFDVTIMFLICLNMTMMVETDDQSPEKV
SILAKINLLFVAIFTGECIKMTALRHYYFTNSWNIFDFVVVLSIMGTVLSDIQKYFF
SPTLFRVIRLARIGRILRLIRGAKGIRTLFALMMSLPALFNIGLLLFLVMFIYSIFGMA
NFAYVKWEAGIDDMFNFQTFANSMLCLFQITTSAGWDGLLSPILNTGPPYCDPNLPNSNG

SRGNCGSPAVGILFFTTYIIISFLIVVNMYYIAIILENFSVATEESTEPLSEDDFDMFYEI
WEKFDPEATQFIEYSALSDFADALSEPLRIAKPNQISLINMDLPMVSGDRIHCMDILFAF
TKRVLGESGEMDALKIQMEEKFMAANPSKISYEPITTTLRRKHEEVSATVIQRAFRRHLL
QRSMKHASFLFRQQVGSSGLSEEDAPEREGLIAYMMNENFSRPLSPSSSSISSTSFPPS
YDSVTRATSDNLQVRVSDYSRSEDLADFPPSPDRDRESIV

Bushbaby SCN5A Paralog 1: SCN10A-201 Ancestry: Amniota

>SCN10A_Bushbaby

MEFPFGLQTTNFRFTPESLVEIEKQIAASEAAKKARGKHKEQTDQEDKPRPQLDLKAC
NQLPKFYGELPEELVGEPLEDLPFYSTHRTFMVLNKGRTISRFSATRALWLFSPFNLR
RTAIKMSIHSWFSLFITVTILVNCVCMTRNDLPERAEYIFTVIYTFEALIKILARGFCLN
EFTYL RDPWNWLD FSVITLAYVGS AIDLRGISGLRTRVLRALKTVSVIPGLKVIVGALI
HSVRKLADV TIL TIFCLSVFALVGLQLFKGNLKNKCVRNSTAIGELANYSSHRESDDYIN
KPGTSDPLLCGNGSDSGHCPDGYICLKTS DNP DFNYSFDSFVWAFSLFRLMTQDSWER
LYQQT LRASGKFYMVFFVLVIFLGSFYLVNLILAVVTMAYEEQNQATIDEIEAKEKKFQE
ALEILRKEQEVLAALKIDTASLHSHNESTLPSKNANERKHRMKPRVSQGSTDNDKSPQPD
PYNQAINAQSFGLTSGRRRASHGVSFHFRLAQLDLSLPDGVTDGVTGDHESHRSLL
LGGGAGQQGPLGPLRSPLPQTTS GSKHGEDGH LTLSTSDLEPVAVEVPAFDAEQKKT
LSAEYLN EPFQAQRAMSVVSIITSVLEELEESEQRCPCLTTLAQKYLIWECCPTWVVKL
TTLFELVTD PFAELTITLCIVVNTLFMAMEHHRMSAAFEAMLQIGNIVFTIFFTAEMVFK
IIAFDPY YFQKKWNIFDCIIVTVSLLELGM AKKGSLSVLRTFRLLRVFKLAKSWPTLNT
LIKIIGNSVGALGNLTILGIIVFVFALVGMQLLGENYNTNRR AISAPDEEWPRWHMYDF
FHSFLIIFRILCGEWIENMWACMQVGEKSICLVFLTVMVLGNLVVLNLFIALLLNSFSA
DNLAAPEDDGEVNNLQVALVRIQVFGRLRTKKALCSFFHRPCLIPQPKVEPKLVVKLPLSS
SKTENHIPANAAMGNLQGPRDEYGD FITNPNMWVSVPIAEGESDLDLEDEAEEDARSSW
QDVIPKGQQEQQLQQAERYEDQLAPRSPEGSGMSSSEDLAPYLGEKWQNEAVPQAPAKGVD
DTSSSEGSTVDCPDPEEILRKIPELADDEEPDDCFTEGCIRHCPCCNVNTAKFPWAMGW

QMRKTCYRIVEHSWFESFIIFMILLSSGSLAFEDCYLDQKPTVKALLEYTDREVFTFIFVF
EMLLKWVAYGFKKYFTNAWCWLDLIVNISLISLTAKILEYSEIAPIKALRTLRLRPLR
ALSRFEGMRVVVDALVGAIPSIMNVLLVCLIFWLIFSIMGVNLFAGKFWRCINTTNDDFS
LVSLSTVNNKSDCENQNSTGNLFWVNVKVNFDNVAMGYLALLQVATFKGWMDIMYAAVDS
REVDAQPKWEDNVYMYLYFVIFIIFGGFFTLNLFVGVIIDNFNQKKKLGGQDIFMTEEQ
KKYYNAMKKLGSKKPQKPIRPLNKYQGFIIDIVTRQAFDIIIMVLICLNMITMMVETDE
QSEKTKVLGKINQFFVAVFTGECVMKMFALRHYYFTNGWNVFDFIVVLSIASLVFSAI
LKSLENYFSPTLFRVFRLARIGRILRLIRAAKGIRTLFALMMSLPALFNIGLLLFLVMF
IYSIFGMSSFPHVRQEAGIDDMFNQTFANSMLCLFQITTSAGWDGLLSPILNTGPPYCD
PNLPNSNGSRGNCGSPAVGIFFTTYIIVSFLIVVNMYIAVILENFNVATEESTEPLNED
DFDMFYETWEKFDPEATQFITYSALSDFADTLGSLRIPKPNRNILMQMDLPLVPGDKIH
CLDILFAFTKNVLGESGELDSLKANMEEKFMATNLSKSSYEPIATTLRWKQEDISATVIQ
KAYRSYVRHRSLALSNNPPGVPRAEAAVSLPDEGFVAFMANENCMLPDKSATVSATSFPF
SYDSVTRGLSDRVNMSTSSSMQNEDEEDTSKEVTSAGP

Bushbaby SCN5A Paralog 2: SCN11A-201 Ancestry: Amniota

>SCN11A_Bushbaby

MDDRCYPVIFPDARNFRPFTSDSLAAIEKRITIQKEKKKAKEKTGDEPPPRPQLDLRASR
KLPKLYGDIPCELIAPLEDLDPFYRNHKTVMVLNKKRTIYRFSKRALFIFGPFNSIRS
FAIRISVHSIFNMFIICTVIINCVMARCGSKDNNSTETHSAEFVFTGIYIFEALIKILA
RGFILDEFSLRDPWNWLDIVIGTAIVSYFPSIRINLSSLRSFRVLRALKAISVVSGLK
VIVGALLRSVKLVNVMILTLFCLSIFALIAQQLFMGGLNQKCIKKDCDRDNSKANESCF
EKKENSTEFKMCWTWMGSRNACSEQFECSTHDYNPDYNYTNFDHFGWSFLAMFRLITQDS
WEKLYQQTLRTCLYSVFFFVVVIFLGSFYLINLTLAVVTMSYEEQNRNVAAETEAKEKM
FQEAQQLLKEEKEALVAMGIDRSSLSLEASLFSPQKRKIFGYKKRSFFLRESGKNQPL
GSDSDEDCSKKPHVLEQTKRLSQNLSLDHFDEHGDPLQRQRALSAVSILTITMREQEKSQ
EPCLPCGKNLASEYLVWECSPQWLCIKKVLRTVMTDPFTELAITICIINTVFLAMEHDN

MDNSFENILNTGNMVFTGIFIAEMCLKIIALDPYHYFRRGWNIFDSIVAVLSFADVMTNK
SSKPRWQFLRSFRVLRIFKLAWSPTLNTLIKIIAHSVGALGNLTVVLAIVIFISVVG
QLFGSTFKSAKTEPCDTTNPCCRWHMGDFYHSFLVFRILCGEWIENMWECMQANGIP
LCIIVFSIMVIGKLVVLNLFIALLLNSFSNEERDGNLEGEAKKTKVHLALLRFHKAFCF
VIHTFAHFYRRWCRRQNSPKQKEMRRGPATESKDVIPLVTEMKKISETQEFGILTSAPRT
LGTGHDRTWLAPLAEEDIESPDGENAQIPITQPKAERQAYELHQENKKSASPGVQSVEI
DIFPEFEQNPPKSDATSMLESTIDLQWQFQLPEVVPKREPERCLPKGLGCSFPCCGM
DKTKSPCITWWNLRKTCYQIVKHSWFESFIIFVILLSSGTLVFEDVYLKERPQIEALLNC
TDKIFTHIFILEMGLKWVAFGFTKYFTSAWCWLDIFIIVIVSVPSLIDLKGLRSFRTLRL
RPLRALSQFEGMKVVVNALIGAIPAILNVLLVCLIFWLIFCILGVNFFSGKFGRLNVTN
AIDISIIADKNQCVSHNYSWHNLEVNFDNVGNAYLALLQVATFKGWMDIMYAAVDSGERE
QQPVFENNSLMYLYFVVFIIFGSFFTLNLFIGVIIDNFNQQKKLGGQDIFMTEEQKKYY
NAMKKLGSKKPQKPIRPLNKCQGLVFDLVTSQVFDIVIISLIILNMVIMMAESYNLTED
TKTILDNLNRAFFVIFTIECLIKIFALRQYYFINGWNLFDCVWWLSIVSTIVSELEQKL
INFPPTLFRIVRLARIGRILRLVRAARGIRTLLFALMMSLPSLFNIGLLLFLVMFIYAIL
GMNYFSKVKPESGIDDIFNRTFGSSMLCLFQITTSAGWDALLKPMLSEKSCNSSSENCR
HLRAIATTFVSYIIISFLIVVNMYIAVILENFNTATEESEPLGEDDFEIFYEVWEKFD
PEATQFIKYSALSDFADSLPEPLRVAKPNKFQFLVMDLPMVSGDRLHCMDVLFATFTRVL
GDSGLDSMKTMMEEKFMEANPSKQLYEPIVTTTKRKEEERGAVIIQKAFRKYWKTAKGD
LENRPHPLQLTLCNGDLSSSGVAQGVHCD

Bushbaby SCN5A Paralog 3: SCN1A-201 Ancestry: Vertebrata

>SCN1A_Bushbaby

MEQTVLVPPGPDSENFNFTRESLAAIERRIAEEKAKNPKPDKNDDENGPKPNSDLEAGKNL
PFIYGDVPPGMVSEPLEDLPYYVNKKTFIVLNKGKAIFRFSATSALYILTPFNPLRKIA
IKILVHSLFSMLIMCTILTNCVFMTMSNPPDWTKNVEYFTFTGIYTFESLIKIIARGFCLE
DFTFLRDPWNWLDFTVITFAYVTEFVDLGNVSALRTFRVLRALKTISVIPGLKTIVGALI

QSVKKLSVDMILTVFCLSVFALIGLQLFMGNLRNKCQWPPTNASLEEHSENNITVDYN
GTLVNETVVKFDWKSQYIQDSRYHYFLEGFPDALLCGNSSDAGQCPEGYMCVKAGRNPNG
YTSFDTFSWAFSLFRLMTQDFWENLYQLTLRAAGKTYMIFVFLVIFLGSFYLINLILAV
VAMAYEEQNQATMEEAEQKEAEFQQMLEQLKKQQEAAQQAATVTASEHSREPSAAGRSLD
SSSEASKLSSKSAKERRNRKRKRQKEQSGGEEKDDDEFHKSESEDSIRRKGFRRFSIEGN
RLTYEKRYSSPHQSLLSIRGSLFSPRRNSRTSLFSFRGRAKDVGSENFADDEHSTFEDN
ESRRDSLFPVRRHGERRNSNLSQTSRSSRMLAVLPANGKMHSSVDCNGVVSLVGGPSVPT
SPVGQLLPEVIIDKPATDDNGTTTETEMRKRRSSSFHASMDFLDPSQRQRAMSIAISLT
NTVEELEESRQKPPCWYKFSNIFLIWDCSPYWLKVKHIVNLVMDPFVDLAITICIVLN
TLFMAMEHYPMTEHFNNVLAVGNLVFTGIFTAEMFLKIIAMPYFFQEGWNIFDGFIVT
LSLVELGLADVEGLSVLRSFRLLRVFKLAKSWPTLNMLIKIIGNSVGALGNLTLVLAIV
FIFAVVGMQLFGKSYKDCVCKISSDCELPRWHMHDFHFSFLIVFRVLCGEWIETMWDCME
VAGQAMCLTVFMMVMVIGNLVVLNLFALLSSFSADNLAATDDDNEMNNLQIAVDRIQK
GIDYVKRKIYEFIQQSFRVKQKILDEIKPLDDLNNRKDCMSNHTTEIGKDLDYLDVNGT
TSGIGTGSSVEKYIIDESDYMSFIHNPSLTVTVPIAVGESDFENLNTEDFSSESLEESK
EKLNESSSSSEGSTVDIGAPAEEQPVVEPEEALEPEACFTEGCVQRFKCCQISVEEGRGK
QWWNLRRTCFRIVEHNWFETFIVFMILLSSGALAFEDIYIDQRKTIKTMLEYADKVFTYI
FILEMLLKWVAYGYQTYFTNAWCWLDLIVDVSLVSLTANALGYSELGAIKSLRTLRLR
PLRALS RFEGMRVVVNALLGAIPSIMNVLLVCLIFWLIFSIMGVNLFAGKFYHCINTTTG
DRFDITEVNNHSDCLKLIERNETARWKNVKVNFNDNVGFGYLSLLQVATFKGWMDIMYAAV
DSRNVELQPKYEESLYMYLVFVIFIFGSFFTLNLFIVIIDNFNQKKKFGGQDIFMTE
EQKKYYNAMKKLGSKKPQKPIPRPGNKFQGMVFDVTRQVFDISIMILICLNMVTMMVET
DDQSEYVTTILSRINLVFIVLFTGECVLKMISLRHYFTIGWNIFDFVVVILSIVGMFLA
ELIEKYFVSPTLFRVIRLARIGRILRLIKGAKGIRT

Bushbaby SCN5A Paralog 4: SCN2A-201 Ancestry: Vertebrata

>SCN2A_Bushbaby

QSVLVPPGPDSEFRFFFTRESLAAIEQRIAEKKAQRPKQERKDEDDENGPKPNSDLEAGKSL
PFIYGDIPPEMVSVPLEDLDPPYINKKTFIVLNKGKAISRFSATPALYILTPFNPIRKIA
IKILVKYSTLFNVLMCTILTNCVFM TMSNPPDWTKNVEYTFTGIYTFESLIKILARGFC
LEDFTFLRDPWNWLDFTVITFAYVTEFVNLGNVSALRTFRVLRALKTISVIPGLKTIVGA
LIQSVKKLSDVMILTVFCLSVFALIGLQLFMGNLRNKCLQWPPGTGIRISLLMSCHKPQP
DFLSLNPAPLSFMCHMSVITHQCPEGYICVKAGRNPNGYTSFDTFSWAFLSLFRLMTQD
FWENLYQLTLRAAGKTYMIFVFLVIFLGSFYLINLILAVVAMAYEEQNQATLEEAQKEA
EFQQMLEQLKKQEEAQXLSFILFYFFNFSLSFLLSLSQKYSIYIKEKRSSLKKNRRK
KKKQKEQS GEEKDEKVRKSESEDSIRRKGRFSLEGSRLTYEKRFS SPHQSLLSIRGSL
FSPRRNSRASLFSFRGRTKDVGSENFADDEHSTFEDNDSRRDSLFPVPHRHGERRHSNVS
QASRASRVLPILPMNGKMHSVDCNGVVSLVGGPSALTSPAGQLLEVRPTKHSTWDRGT
TTETEIRKRRSSSYHVSMDLLEDPTS RQRAMSMASILTNTMEELEESRQKCPPCWYKFAN
MCLIWDCKPWLVKHLVNLVMDPFVDLAITICIVLNTLFMAMEHYPMTEQFSNVLSVG
NLVFTGIFTAEMFLKIIAMDPPYYFQEGWNIFDGFIVSLSLMELGLANVEGLSVLRSFRL
LRVFKLAKSWPTLNMLIKIIGNSVGALGNLTLVLAIVFIFAVVGMQLFGKSYKECVCKI
SSDCELPRWHMHDFHFSFLIVFRVLCGEWIETMWDCMEVAGQTMCLTVFMMVMVIGNLVV
LNLFLALLSSFSNDLAATDDDNEMNNLQIAVGRMQKGIDFVKRKLREFIQKAFVRKQK
ALDEIKPLEDLNNKKDSCISNHTTIEIGKDLNLYKDGNGTTS GIGSSVEKYVVDESDYMS
FINNPSLTVTVPIAVGESDFENLNTEEFSSSDMEESKEKLNATSSSEGSTVDIGAPAEG
EQPEVEPEESLEPEACFTEDCVRKFCCQISIEEGKGKLWWNLRKTCYKIVEHNWFETFI
VFMILLSSGALAFEDIYEQRKTIKTMLEYADKVFTYIFILEMLLKWVAYGFQMYFTNAW
CWLDLIVDVSLVSLTANALGYSELGAIKSLRTLRLRPLRALS RFEGMRVVVNALLGAI
PSIMNVLLVCLIFWLIFSIMGVNLFAGKFYHCINYTTGEMFDVSVVNNYSECKALIESNQ
TARWKNVKVNFDNVGLGYLSLLQVATFKGWMDIMYAAVDSRNVELQPKYEDNLYMYLYFV
IFIIFGSFFTLNLFIGVIIDNFNQKKKFGGQDIFMTEEQKKYYNAMKKLGSKKPQKPIP
RPANKFQGMVFDVTKQVFDISIMILICLNMVTMMVETDDQSQEMTNILYWINLVFIVLF

TGECVLKLSLRYYYFTIGWNIFDFVVVILSIVGMFLAELIEKYFVSPTLFRVIRLARIG
RILRLIKGAKGIRTLFFALMMSLPALFNIGLLLFLVMFIYAIFGMSNFAYVKREVGIDDM
FNFETFGNSMICLFQITTSAGWDGLLAPILNSGPPDCDPEKDHPGSSVKGDCGNPSVGIF
FFVSYIIISFLVVVNMYIAVILENFSVATEESAEPLEDDFEMFYEVWEKFDPDATQFIE
FSKLSDFADALDPPLLIAPNKVQLIAMDLPMVSGDRIHCLDILFAFTKRVLGESGEMDA
LRIQMEERFMASNP SKVSYPEITTTTLKRKQEEVSAIIQRAYRRYLLKQKVKKVSSIIYKK
DKGKECDGTPIKEDPLIDKLNENSTPEKTDMPSTTSPPSYDSVTKEPEKEKFEKDKSEKE
DKGKDIRESKK

Bushbaby SCN5A Paralog 5: SCN3A-201 Ancestry: Vertebrata

>SCN3A_Bushbaby

MAQTLLVPPGPESFRLFTRESLAAIEKRAAEKAKKPKKEQDDDENKPKPNSDLEAGKNL
PFIYGDIPPEMVSEPLEDLPYYINKKTFIVLNKGKAIFRFSATSALYILTPLNPVRKIA
IKILVHSYPFYSTLFSMLIMCTILTNCVFM TLSNPPDWTKNVEYTFGTGIYTFESLIKILA
RGFCLEDFTLRDPWNWLD FSVIVMAYVTEFVDLGNVSALRTFRVLRALKTISVIPGLKT
IVGALIQSVKKLSDVMILTVFCLSVFALIGLQLFMGNLRNKCLQWPPNDSAFETNTTSYF
NGTTDSNGTFVNITLRTFNWKDYIGDESHFYVLEGQNDPLLCGNGSDAGQCPEGYICVKA
GRNPNYGYTSFDTFSWAFLSLFRLMTQDYWENLYQLTLRAAGKTYMIFVLVIFLGSFYL
VNLILAVVAMAYEEQNQATLEAEQKEAEFQQMLEQLKKQEEAQSAVAAASAASRDFSG
MGGLGELLESSSEASKLSSKSAKEWRNRKRKRQREHLEGTHKGEGDRFPKSESEDSVRR
RSFLFSMDGNRLSGDKKFCSPHQSLLSIRGSLFSPRRNSKTSIFSFRGRAKDVGSENDFA
DDEHSTFDESERRDSLFPVPHRQGERRNSNVSQASMSSRMVPGLPANGKMHSSVDCNGVV
SLVGGPSALTPPSGLFGLQGTTTETDIRKRRLSSYQISMEMLEDSSGRQRAMSIASILT
N
TMEELEESRQKPCPCWYRFANVFLIWDCCDAWLKIKHLVNLIVMDPFVDLAITICIVLNT
LFMAMEHYPM TQQFSSVLTVGNLVFTGIFTAEMVLKIIAMDPYYYFQEGWNIFDGIIVSL
SLMELGLSNVEGLSVLRSFRLLRVFKLAKSWPTLNMLIKIIGNSVGALGNLTLVLAIVF

IFAVVVWMLGLKCKGRICVFLNFCDLMLQFLSRVWGTFAVIKVCGYWTKISYSKGKMMVK
HLCIFYHIALQIGHLAVLNLFALLSSFSNDLAATDDDNEMNNLQIAVGRMQKGIDYV
KNKMRECFQRAFFRKPVKVIEIHEGNKIDSCMSNNTGIEISKELNYLKDGNGTSGVGTGS
SVEKYVIDENDYMSFINNPSLTVTVPIAVGESDFENLNTEEFSSSELEESKEKLNATSS
SEGSTVDVAPPREGEQAEIEPEEDLKPEACFTEGCIKKFPCQVSTEEGKGKIWWNLRKT
CYSIVEHNWFETFIVFMILLSSGALAFEDIYIEQRKTIKTMLEYADKVFTYIFILEMLLK
WVAYGFQTYFTNAWCWLDFLIVDVSLSLVANALGYSELGAIKSLRTLRLRPLRALSFR
EGMRVVVNALVGAIPSIMNVLLVCLIFWLIFSIMGVNLFAGKFYHCVNMTTGSMFKVSEV
NNLSDCQALGKQARWKNVKVNFNDNVGAGYLALLQVATFKGWMDIMYAAVDSRDVKLQPEY
EENLYMYLYFVIFIIFGSFFTLNLFIVIIDNFNQKKKFGGQDIFMTEEQKKYYNAMKK
LGSKKPQKPIPRPGNKFQGMVFDFVTRQVFDISIMILICLNMVTMMVETDDQGNDMTVVL
SRINLVFIVLFTGEFVLKISLRYYYFTIGWNIFDFVVVILSIVGMFLAEMIEKYFVSPT
LFRVIRLARIGRILRLIKGAKGIRTLLFALMMSLPALFNIGLLLFLVMFIYAIFGMSNFA
YVKEAGIDDMFNFETFGNSMICLFQITTSAGWDGLLAPILNSAPPDCPDPAIHPGSSVK
GDCGNPSVGIFFFVSYIIISFLVVVNMYIAVILENFSVATEESAEPLEDDFEMFYEVWE
KFDPDATQFIEFSKLSDFAAALDPPLLIAPNKVQLIAMDLPMVSGDRIHCLDILFAFTK
RVLGESGEMDALRIQMEDRFMASNPSKVSYPEITTTLKRKQEEVSAAIQNRNFRCYLLKQ
RLKKLINKYDKETIKGRIDLPLKPDMIIDKLNGNSTPEKTDGSSSTTSPPSYDSVTKPDK
EKFEKDKPEKESKEIEVSENQK

Human Ortholog 3: Cave fish SCN1A-201 which is many-to-many with Human SCN5A. Has 18 paralogs unlike humans

>SCN1A_Cave_fish

MKFSLTEAVTWFMVIMFTILTNCAMTMSSEPGWAKIAEYFTFTGIYTLESVIKILARGF
CIGKFTFLRDPWNWLD FSVIVLAYVTEFVKMGNV SALRTFRVLRALKTISVIPGLKTIVG
ALIQSVKKLSDVMILTVFCLSVFALIGLQLFMGHLKYKCIQLPANHTDLGNGSISYNGKA
VPEDWLKNYTSDP SLYNLSGKKDPLICGLVRDAGKCPNGYFCSKASRNPNYGYTSFDSF

GWAFLSLFRMTQDCWENLYQQTLRAAGKTYMIFVFLVIFLGSFYLVNLILAVVAMAYDE
QNNANLAEAAQQKEEFQAMLEQLKKQQADAQAAAASFESGDFSGEMTDTSSSETSKLSSKS
AKERRNQKKKKKQREEAREDEKADSEKTHNSVSEGSIRRPSPFRFSPDLNRLPYDRYTSP
RQDDTEQEYSMRYDSHQSPGYLDEQTARQRALSVASIITNTMEELEESRQKCHPCWYRF
AHTFLIWECCPTWMKIKKAVHMMVMDPFVDLSITICIVMNTIFMAMEHHPMDKDFSSVLS
MGNYVFTGIFTAEMVFKIIALDPYYFQEGWNIFDSVIVSLMELGLANISGMSVLRSF
RLLRVFKLAKSWPTLNMLIKIIGNSMGALSNTLVLAIIIFIFAVVGMQLFGKSYKTSLT
KIAPDGLRWMMDFLHSLIVFRVLCGEWIETMWDCMEVHGQPLCLIVFLMVMVIGNLV
VLNLFALLSSFSADNLAATEDDNEMNNLQIALGRIHRGVAFVKASLRRFFQTVCLVR
RKKSEQNGLNKSKLPDISNHTTVELIKDPGSMKDLAGADSDNENFIMNSSVTVPPIA
TADSDAECQNMEDYSSSDMEEDKEKLSEVMSSEGSTVEIRKDGADSLEFELEESMDP
EPCFTDGCVRRCCQVNMEKERWRTWWTVRRTCFRIVEHTWFESFIIFMILLSSGALAF
EDIYIEGYKTLKMILEYADKVFTYVFMLEMLLKWLAYGFAKYFTNAWCWLDLIVDVSLI
SLVANALDYSELGAIKSLRTLRLRPLRALS RFEGMRVVVNALLGAIPSIMNVLLVCLIF
WLIFSIMGVNLFAGKFYECVNITTGIRMNETDVANKTECDMLGEGNARWKNLKINFDNVG
AGYLALLQVATFKGWMDIMYAAVDSRNLNEQPKFEVNLIMYGYFVGFIIFGSFFTNLFI
GVIIDNFNQKKKFGGQDIFMTEEQKKYYNAMKKLGSKKLQKPIPRPTNKVQGFIDIVT
NQAFDIFIMILICLNMVTMMVESDDDPKMKTVLNWLNMI FVALFTTECALKMVSLRQYF
FTVGWNIFDFVVVLSIVAMCISDVITYFFSPTLLRVVRLARIGRILRLIKGAKGIRTLL
FALMMSLPALFNIGLLLFLVMFIYAIFGMSNFAYVKKEAGIDDMFNFETFGNSMICLFQI
TTSAGWDGLLSPILNRDIPDCNPTKDNPGSKVKGDCGSPSIGIIFVSYIIICFLIVNM
YIAVILENFSVATEESAEPLEDDFEMFYEVWEKFDPKATQFMEYNKLSDFADALDPPLR
MPKPNKIQLIGMDLPMVTGERIHCLDILFAFTKRVLGEGGEMDILRGQMEDRFMASNP SK
VSYEPITSLRRKHEDMSALVIQRAYRKYVGKHRMKPAPSTHKETVQENGKVSDKDSVVR
NNINNHSTLEPTVCPPSYNSVTQLRKDKYEKDKREKEVKGKDNKEQKK

Cave fish SCN1A Paralog 1: ENSAMXT00000012464 Ancestry: Neopterygii

>ENSAMXT00000012464_Cave_fish

MATMLLPAGPDALRRFTRESLVAIEQRIADEQAKNAKDTPPNKGTTTEPKLDLEAGKVLP
RIFGDIPTGLVGVPLEDIDPFYFKNKKTIVLNKGKAIFRFSATSAVYIFTPFHLIRRI
IRILLSTLFSFFIMCTILTNC CFMAMSDPAHWTKYLEYTFTGIYTFESLIKILARGFCLE
PFTFLRDPWNWLD FSVIVMAYVTEFVDLGNVSALRTFRVLRALKTISVIPGLKTIVGALI
QSVRKLADVMILTVFCLSVFALIGLQLFMGVLRQKCVRSAAHCVNSTFPANTS FVCNNKT
WQSMKEFVTSEENYYKIEGAKDGLICGFSSDAGKCPDGFDC LKTGRNP NYGYTSFDSFGW
AFLALFRLMTQDYWENLYHQTLRSAGKTYMIFVVLVIFLGSFYLVNLILAVVAMAYEEQN
QATIAEAWQKEREFLAMEQLRRDQRALAKRNKEAELARAQELLPSPIKRRDSRDRRARS
RSHRTMSEETEEDTDLRSPKFDPFEEKPAHPLLATLSSHPLSSRRGSNISIFTFRPRNNS
EADFADDETSVIGDHGSRSRAGSTVTPWHKRRTGSVRSHCSQVFTPTLTVNGRLNLSLEQ
NGITGITLHTPTSFPGCSMEKVKEDTELV CATEAPKPVPEVQVEAPPPRRKRGLSSISFF
SDAMDELEESRQKCPPCWYEF AKKYLIWTCAPVWMKFKDGVKIMVMDPFLDLAITICIVL
NTLFMALEHYPMTEEFNGMLSVGNLVFTGIFTAEMVLKLVAMDPYFYFQQGWNIFDGIIV
CLSLMELGLSNVEGLSVLRSFRLLRVFKLAKSWPTLNTLIKIIGNSVGALGNLTLVLAII
VFIFAVVGMQLFGKNYQDCVCKISIDCSLPRWHMKDFFHSFLIVFRVLCGEWIETMWDCM
EVAGQPLCILVFMVLMVIGNLVVLNLF LALLSSFS SDNLSAPDDDGEMNNLQIAIARIH
SGLTWLLAFIKDLCSGNLTRNQKNKEGQGAKKCQNSNHAECNGVVGRIGRYGEKYIITE
EEDSYMTPNPNLTICVPIAPGESDVEFLEEEEEEDTETSEDEDNKPIRAEMRNAS AQVDQL
AKEGPKKEHQYKLFMPFITLMDYIYVSNIHGSLFFSISP NVVWHM VYQTSLEVVS LSEG
STVDLRKPGEEDMSELIEDTMEPEECFPEFCVRRCECCKINTTQGLGQAWWRLRKTCYQ
IVEHSWFETFIIFMILLSSGALAFEDIYIEQRKVVKVVLEYADKVFTYIFVLEMFLKWIA
YGFKKYFTNYWCWLDLIVDVSLISLVANS LGYSDFGAIKSLRTLRLRPLRALS RFEGM
RVVVNALIGAIPSIMNVLLVCLIFWLIFSIMGVNLFAGKFGKCVNRTGYIHNASIVNNKS
DCQSMNDTQFYWTKVKVNF DNVLGLGYLSLLQVATFKGWMEIMYAAVDSRGVEEQPIKEIN
LYMYLYFVIFIIFGSFFTLNLF IGVIIDNFNQQKRKLLQGGQDIFMTEEQKKYYN AMKKL
GTKKPQKPIPRPANILQAFIFDLVSKQAFDISIMMLIILNMITMMIETDEQSDRMESILN
KVNLAFIIFITTECLFKIFALRCYFFTISWNVFDFV VVILSIIGIVLADIIEYFVSPTLF

RVIRLARIGRVLRLIRGAKGIRTLFFALMMSLPALFNIGLLLFLVMFIYAIFGMANFAYV
KKQGGIDDMFNFETFGNSMICLFQITTSAGWDNLLDPILNNSPEECNPVNTGTNTKGN
CGNPSVGITFFVSYIIISFLIVVNMYIAIILENFSVATEESTEPLSEDDFEMFYEVWEKF
DVEATHFIEYSMLSNFADALSEPLRIAKPNKIKLISMDLPMVSGDKIHCLDILFAFTKRV
LGESGEMDALKQQMEDKFMLTNPSKISHEPITTTLRRKQEDVSATVIQRAYRRHLVKRQM
KQASYLYRQIKQEGADVEGTPERVGLIACMIKENYGPEEEVVEESLHSFPPSYETITKAP
SEHFLIMLPDSRVPAPFETFTSAETYEETFL

Cave fish SCN1A Paralog 2: ENSAMXG00000021379 Ancestry: Neopterygii

>ENSAMXG00000021379_Cave_fish

MAAMLFPFPGPSLHRTRESLAGIEQRIAEQARNARRYQEDLGDVELPKPRADLEAGKQ
LPRIFGDIPSGLVGVPLEDIDPFYFQNQRTFIVLNKGKAIFRFSATSALYIFSPFHPIRR
ASIKILVHSLFSLFIMCTILTNC CFMAMSEPAWAKYVEYFTFTGIYTFESLIKILARGFC
IGPFTFLRDPWNWLD FSVIVMAYVTEFVDLGNVSALRTFRVLRALKTISVIPGLKTIVGA
LIQSVKKLADVMI LTVFCLSVFALIGLQLFMGNLRQKCV RSPAHCINNTVPSIYSNSSFY
CNNRTWLSVHDFITDEDNFYKVEGAKDALICGNSSDAGKCPDGFECMKTGRNP NYGYTSF
DTFGWAFLSLFRLMTQDYWENLYHQTLRSAGKTYMVFFV VVIFLGSFYLVNLILAVVAMA
YEEQNQATIAEAWQKEKEFQLAMEQLKKEQQAQKAQETESVLPDLSPSALQDDKEHKG
RKKSLRPLSEEAENDGA EKT PKLDAIEGVKQTHALLVRTLSSRTRRG SQVSIFNFRPRNK
DSEADADDEYSVYGDSDSRAGSLVIPWHRRRTSAQSTGSHSSQVFFPSLNINGKLFVAMD
QNGISGPGPLSPLPLPTCTMEKVKEESGTNSL NELSSMLLPQLPQEGRDRALSAASYLTD
AMEEEEAQQKCHPCWYVFAHKYLVWTCNPGWLKLKEWVKFMVMDPFLDLAITICIVLNT
LFMALEHYPMTDEFNKMLS VGNLVFTGIFTAEMVLKIIALDPYYYFQQGWNIFDSFIVCL
SLMELGLSNVEGLSVLRSFRLLRVFKLAKSWPTLNTLIKIIGNSVGALGNLTLVLAIIVF
IFAVVGMQLFGKNYELCVCKISKDCILPRWHMKDFFHSFLIVFRVLCGEWIETMWDCMEV
AGQPLCILVFM LVMVIGNLVVLNLF LALLSSFSADNLSAPDEDGEMNNLQIAIARIHRG
IGWLRRALCDFFNGNFKRRRQKAKEAKAMLKLR LSQQAQRAEGNGTAGVIARTGDKCAA

TDDSYMTNPNTISVPIAPGESDVEFPEEEEDDDDEASESSDEEEEAEKPSDDISLSEGS
TVDLRKPGEEDDEYSEMAEEDMDPDNCFPEVCVRHFQCCDINTNEGLGRVWWRLRKTCYH
IVEHSWFETFIIFMILLSSGALAFEDIYEQRKVVKIVLEYADKIFTYIFILEMTLKWIA
YGFKKYFTNYWCWLDFLIVDVSLSLVANTLGYSDFAAIKSLRTLRLRPLRALS RFEGM
RVVVNALIGAIPSIMNVLLVCLIFWLIFSIMGVNLFAGKFGRCNLRTGFVYNASHINNKT
ECLAMNDTQYYWSKVKNFDNVGAGYLALLQVATFKGWMEIMYAAVDSRAVEEQPVKEVN
LYMYLYFVIFIIFGSFFTLNLFIGVIIDNFNQQKRKLGGQDIFMTEEQKKYYNAMKKLGS
KKPQKPIRPLNPLQGFFFDLVSKQAFDIMIMLLILLNMVTMMVETDEQSPRMEMILYNI
NLAFIVIFTTECIKLIALRCYFFTVSWNIFDFVVVILSIVGIVLADIIEKYFVSPTLFR
VIRLARIGRILRLIRGAKGIRTL LFALMMSLPALFNIGLLLFLVMFIYAIFGMANFAYVK
KQGGIDDMFNFETFGNSMICLFQITTSAGWDSLLGPILNNSPEECDPNIPHTGTNARGNC
GNPSVGITFFVYIIISFLIVVNMYIAIILENFSVATEESTEPLSEDDFEMFYEVWEKFD
PEATQFIEYAKLSDFADTLSEPLRIAKPNKIKLISMDLPMVSGDKIHCLDILFAFTKRVL
GESGEMDALKQQMEEFMMANPSKISYEPITTLRRKQEEVSAVVIQRAYRRHLVRRQLK
QASFIYRQINSDGAAKEDESPPEKEGLIASLMKENYGPEVEVEVEDLSSTSSPPSYDSVT
RATSELFQALIPDSRNSDLKSYPEPDRDRETF

Cave fish SCN1A Paralog 3: SCN4AA-201 Ancestry: Euteleostomi

>SCN4B_Cave_fish

MANLVPPTGREAFRRFTPESLAKIERLIQEKEHEVEGVEPEPTAPSSDLEAGKTLPMIY
GDPPDELLNTPLEDIDPFYSAQKTFIVISKGNTIFRFNAEPACYILSPFNLVRRGAIKIL
IHSYPFLHLLFSMFIMITILSNCFMTMSNPPAWSKTVEYVFTGIYTFEATVKVLSRGFC
IGSFTFLRDPWNWLD FMVISMAYITEFVDLGNVSALRTFRVLRALKTITVIPGLKTIVGA
LIQSVKKMVDVMILTVFALAVFALIGLQLFMGNLRHKCIRWPISNSTMEEYTSTPAYNHT
FTNSTDFKAYINNEENQYFLEGLDALLCGNSSDAGKCPEGYTCMKAGRNPNYGYTSYD
SFGWAFLALFRLMTQDYWENLFQLTLRAAGKTYMIFVVFVIFLGSFYLINLILAVVAMAY
DEQNEATQAEAREKEEEFQRLLEQLKNQEQQIIQSEESLLKCRQNNCKVHTQYRPTSTHP

KSSCSIDSSEKKFYQIENLWNLIKRKMDDHKPSNXSELSFLMRFCGPAREEDKIDTKSTT
SKHSMNYLDQPLSKKAASQLSVLTNAMEAAVCLGSETQMVGRQQRRTNIIKLRELSAHY
NSINLILDIWRYLEFCNKSTKNLVIFYLFSELEDAQRPCPPGWYRFADIFLKWDCCAPWI
CFKKWVYFVVMDFVDLGITICIVLNTLFMAMEHYPMSPFEHVLSVGNLVFTGIFTAEM
VFKLIAMDPYFFYQVGWNIFDSIIVTSLVELGLANVQGLSVLRSFRLLRVFKLAKSWPT
LNMLIKIIGNSVGALGNLTLVLAIVFIFAVVGMQLFGKSYKDCVCKIAQDCELPRWHMN
DFFHSFLIVFRILCGEWIETMWDCMEVAGAGMCLMVFMVMVMVIGNLVVSRLVMVIRMHIF
CSGYLNVDKRLVYHQHASEVARLSHGCIYTLNWIFVSILQVCKHPVKRDFTFFHSGNVNRN
VKCNYIYISGVIKNTIMCTLSLQELLTVSAQATCVAVLVVGAGSLNRDRPRSVMTAGHDTL
GDVSSDTVLSPELHGLLLRDTYYKVGPKFEAPGPDSTRQLLNPDNLNIIKNLWCDLKLFK
LLNLTELEMFCKEEWSKIPSTRSPTLIGSYRKRLEAVISPLNIDFKELLITKILKKSFHT
TVNMFISFFQVSLISLTANLLGYSELGPIKSLRTLRLRPLRALS RFEGMRVVVNALVG
AIPSIMNVLLVCLIFWLIFSIMGVNLFAGKFYRCINTTTEELFMDLVNNKSDCMALMYT
NEARWVNVKVNYDNVGLGYLSLLQVATFKGWMDIMYAAVDSREAEQPSYEINIYMYLYF
VIFIIFGSFFTLNLFIGVIIDNFNQKQKFGGEDLFMTEEQKKYYDAMKKLGSKPKVKPI
PRPSNCIQGVVDFDISQQFFDIFIMVLICLNMVTMMVETDDQSPEKVEVLYQINLVFIVI
FTSECVLKMFALRHYFFTIGWNVFDFIVVILSVAGLMLSDIIEKYFVSPTLFRVIRLARI
GRVLRLIKGAKGIRTLFALMMSLPALFNIGLLLFLIMFIFSIFGMSNFAYVKKQAGIDD
IFNFETFGNSIICLFEITTSAGWDGLLLPMNLNSAPPDCDPTVENPGSEVKGNGCGNPGMGI
MFFCSYLIMSFLVVVNMYIAIILENFNVAQEESGDPLCEDDFEMFDETWKFDVEGTQFL
EYDRVDFDVNTLQEPLRIPKPNRLRIQMDLPVVTGDKIHCLDILLAVTQEVLGDTTEMA
AMRESIEAKFKMSNPTSASFEPITTTLRKEEERA AVLIRAYRKHLLKRSIRHASFIRR
SRKKKVVRRQEDEEPPKEGLIARKMNSLYGSNPD LAMAMELKARPMQSNPTSSQPPVHRT
YRRPQGRMMVIPVEVTNEVILRSAPTASRGFSEV

Cave fish SCN1A Paralog 4: SCN8AB-201 Ancestry: Vertebrata

>SCN8AB_Cave_fish

MAAPLLAPPGPDSFKRFTPETLANIEKRIAEKKKKPVKPRSDSSHRDDDDDESGPKPNSD
LEAGKSLPFIYGDVPSEMVAVPLEDLDPFYLNKKTFFIVLNKGKTLFRFSATPSLYIISPF
SLFRQIAIKILIHSLFSMIIMCTILTNCVFMFTFSNPPEWSKQVEYFTFTGIYTFESLTKIV
ARGFCIDGFTFLRDPWNWLD FMVISMAYVTEFVDLGNVSALRTFRVLRALKTISVIPGLK
TIVGALIQSVKKLSDVMILTVFCLSVFALIGLQLFMGNLRQKCVFWPISNLSVTYLANGS
KGFDFDEYIMNDTNFYFLPGQLDALLCGNSSDSGRCEGYTCMKAGRNPNYGYTSFDSFG
WAF LALFRLMTQDFWENLYQLTLRAAGKTYMIFFLVIFVGSFYLVNLILAVVAMAYEEQ
NQATIEEAEQKEAEFKAMLEQLKKQEEAQANAMATSAGTVSEDAVEDDGGGRLSRSSSE
VSKLSSSAKERRNRKKKMRKEQEKEKGDSEKVVKSESDDGSKRSRFRFPDNRLGRKTSI
MNQSLLSIPGSPFMSRHNSRSSIFSFKGRSRDVGSENEFADDEHSTVEESEDRRGSLFIP
YRRNSYSGYSQGSSRINPLAPHSGCKRNSTVDCNGVVSLIGPGGRLLPETTEVDVKRKH
SGSLMVSDQLNTSFRKERANSVMTVITNTLVEELESQRKCPPCWYKFANTFLIWECC
PIWIKIKEIVNLIVMDPFVDLAITICIVLNTVFMAMEHYPMTEQFENVLSVGNLVFTGIF
TAEMFAKLIAMDPYFFFQEGWNIFDGFIVLSLVELGLADVEGLSVLRSFRLLRVFKLAK
SWPTLNMLIKIIGNSVGALGNLTLVLAIVFIFAVVGMQLFGKSYKDCVCKIAQDCELPR
WHMNDFFHSFLIVFRVLCGEWIETMWDCMEVAGQTMCLTVFMMVMVIGNLVVLNLFALL
LSSFADNLAATDDD GEMNNLQISVIRIKKGIWLKIHVRLLVAHV LKKAPLEDEDKPLD
DMYDKKLNIIGNHTGV DIKCGDLDFAKNGNGTTSIGIGSSVGKYMIDEDRMSFIHNP NLTV
RVPIAVGESDFENLNTEDFSSES DVENSKDLDDTSSEGSTIDIKPDEEEVA AVEVVEEY
LDPEACWTDACIARYKCCDVPITEGWGKYWWYLRKTCYLIVEHNWFETLIIFMILLSSGA
LAFEDVYIEQRKTIQIILEYADRVFTYIFILEMLLKWWAYGFVKYFTNAWCWLDF FIVDV
SIVSLIANALGYSDLGPIKSLRTLRLRPLRALS RFEGMRVVVNALVGAIPSIMNVLLVC
LIFWLIFSIMGVNLFAGKYYYCFNETSEEYFEPDEVNNKTECFNLIEQNFTEVRWKNVKI
NFDNVGAGYLALLQVATFKGWMDIMYAAVDSRKVEDQPLYEDNIYMYIYFVIFIFGSFF
TLNLFIGVIIDNFNQKKKFGGQDIFMTEEQKKYYNAMKKLGSKKPQKPIPRPQNKIQGV
VFDFVMQQAFDISIMMLICLNMVTMMVETDDQSD ETENILYWVNFVFIVAFTGEFVLKLF
ALRHYYFTNGWNIFDCVVVLSIVGMFLADLIEKYFVSPTLFRVIRLARIGRILRLIKGA
KGIRTL LFALMMSLPALFNIGLLLFLVMFIFSIFGMSNFAYVKRELGIDDMYNFETFGNS

MIILFMITTSAGWDGLLAPILNYPPDCNPEKENPGTTVKGDCGNPSVGIFFFVMYIIVSF
LIVVNMYIAIILENFSVATEESADPLCEDDFESFYEIWEKFDPDASQFITFAKLPDFADT
LEHPLRVPKPNIIELIAMDLPMVSGDRIHCLDILFAFTKRVLGDSGDLDMMRQQMEERFV
AANPSKVSYPEITTTLRKQEEVSAVVIQRAYRAHLARKGFVCKRRPANNKLENGGTNQE
KKESTPSTASLPSYDSVTKEPEKEKQDDNNEGKGRKEKGRNQKDVRESKC

Cave fish SCN1A Paralog 5: SCN1LAB-201 Ancestry: Vertebrata

>SCN1LAB_Cave_fish

MAATLLVPPGPDSEFRFPESLAAIERCIAEEAARRPKGERRSDDDDENGPKPNSDLEAG
KSLPFIYGDIPPGLVSVPLELDPYYQNQTTFIVLNRGKAIFRFNATPALYFLSAFNPLR
RVAIKVLVHSMFSFVIMCTILTNCAMTSLNPPEWAKNVEYTFGTGIYTFESLIKILARGF
CVGHFTFLRDPWNWLD FSVIVMAYVTEFVDLGNVSALRTFRVLRALKTISVIPGLKTIVG
ALIQSVKKLSDVMILTVFCLSVFALIGLQLFMGNLRQKCVRWPQSNGTQNYSMELNLYNS
TFNWTEYILDDRNYYYLPNRRDALLCGNASDAGQCPEGYTCIKAGRNPDYGYTSFDTFSW
AFLSLFRLMTQDFWENLYQQTLRAAGKPYMVFFVLVIFLGSFYLVNLILAVVAMAYDEQN
QATIEEAQQKEEEFQAMLEQLKRQQEEAQVAAAAATESGEYSGRGGLSESSGGSRLSSK
SAKERRNRRKKRKQREEEEEEEKADQEKFKHSESEDSIRRTGFRFSIDANRLSYEKKCST
PNQSLLSIRGSLFSPRRNSRASLSFRGRARDFGSEND FADDEHSTFEDSDSRRGSLFVP
RRIERRNSTVSQCSLAAPRIMLPANGKMHCTVDCNGVVSLVGGTSVPTSPIGRLLPEGTT
TESEARKKRSQSHQTS DYLD ETVARKRAMSVASILTNTMEELEESRQKPPCWYKFANSF
LIWNCCPMWLKVKTIVKMIVMDPFVDLAITICIVLNTLFMAMEHYPMTKEFNDVLSVGNL
VFTGIFTAEMCLKVIALDPYYYYFQEGWNIFDGIIVSLSLMELGLANVEGLSVLRSFRLLR
VFKLAKSWPTLNMLIKIIGNSVGALGNLTLVLAIVFIFAVVGMQLFGKSYRECVCKIAE
DCELPRWHMVDFHFSFLIVFRVLCGEWIETMWDCMEVAGQTMCLIVFMLVMVIGNLVVLN
LFLALLSSFSADNLAATDDDSEMNNLQIAVGRIQKGIAMIKSAVRQFLQSMFLAGRKPG
ALDEEKPLDDLHSDGKENCLTNHAPVVVDLGKDYLKEDCVSPGNNGVEGHVKYGIEEGDYM

SFIHNPSLTVTVPIAVGESDFENLNTEDFSSDSSDVEGSKEKLPEDNVLSSEGSTVDIR
PPGEGAESVELEPEESLDPEDCFTEGCVMRFFQCCQVDIEKGKWRSSWWTLRKTCFIIVEHN
WFESFIIFMILLSSGALAFEDIYIEQRKTIKTVLEYADKVFTYIFILEMLLKWVAYGFVK
YFTNAWCWLDLFLIVDVSLVSLVATALGYSELSAISKSLRTLRLRPLRALS RFEGMRVVVN
ALLGAIPSIMNVLLVCLIFWLIFSIMGVNLFAGKYHCVNSTTDEMFPISEVNNKSECLA
LNE SARWK NVKINF DN VGAGYLALLQVATFKGWMDIMYAAVDSRNVEDQPDYE VNLYMYL
YFVIFIIFGSFFT LNLFIGVIIDNFNQKKKFGGQDIFMTEEQKKYYNAMKKLGSKKPQK
PIPRPTNKFQGLIFDLITKQAFDIIIMILICLNMVTMMVETDDQTKEMDNILYWINLVFI
VLFTGECVLKMOVSLRHFFTVGWNVDFV VVILSIVGMFLSEVIEKYFVSPTLFRVIRLA
RIGRILRLIKGAKGIRTL LFALMMSLPALFNIGLLLFLVMFIYAIFGMSNFAFVKHEAGI
DDMFNFETFGNSMLCLFQITTSAGWDGLLAPILNKREPD CDSETEHPGNSYRGDCGNPSV
GIFFFVSYIIICFLIVVNMYIAVILENFSVATEESAEP LSEDDFEMFYEVWERFDPNATQ
FVEYDKLSDFADSLDPPLRIPKPNKIQLIAMDLPMVSGDRIHCLDILFAFTLRVLGEEGE
MDALRGQMEERFMASNP SKVSYEPITTTLRKQEEMSAIIIQRAFRHYRIRLTVKKASDM
YRQRLKDGGEQPAEKEVLVICKFHENSASDKTDMTPSSASPPSYNSVAKSEKDKYEKERR
EKEDNAKDNARGKKK

Human Ortholog 4: Chicken SCN5A-201 which is 1-to-1 with Human SCN5A. Has 13 paralogs unlike humans

>SCN5A_Chicken

MADFLLPPGTNSFHRFTPESLAAIEKRIA EK LARNAKQEYREQLGEEKPQPQFDLQACK
KLPDIYGTVPPELIGEPLEDIDPFYNDRKTFVVLNKGKTIFRFSATPALYILSPFHPVRR
AAKILVHSLFSMFIMCTILTNCVFMAQSETPSW NKYVEYFTFTGIYTFESLIKILARGFC
MTEFTFLRDPWNWLD FSVIVMAYITEFVDLGNVSALRTFRVLRALKTISVISGLKTIVGA
LIQSVKKLADVMILT VFCLSVFALIGLQLFMGNLRHKCVRDYTQFNFTNGSLYLDGRTWN
NSEEFLNDPVNYFIKNGTEDVLLCGNSTDAGTCPEGYICLKAGENPDHGYTSFDTFGWAF

LSLFRMTQDYWERLYQQTLRSAGKIYMLFFMLVIFLGSFYLVNLILAVVAMAYEEQNQA
TIAETEEKERKFREAMEMLKKEQEALAAKGIDSMSSLEMSPLASKNAKERRNRRKKKK
SLGAEEYGEDQRNSKCEYDDSQRRMTSPSDEASKKQLLMPHRPSVDHSDEPFQRQRAVSA
VSIITSALEEELEESHQKPCPCWNHFAVKFLIWDCCPFWLLIKKFVKFVMDPFTDLTITL
CIVLNTLFMALEHYKMTKEFDHMLYIGNLVFTGIFTAEMIFKVIALDPYYYFQQGWNIFD
SIIVILSLMELGLSSMGNLSVLRSFRLLRVFKLAKSWPTLNTLIKIIGNSVGALGNLTLV
LAIIVFIFAVVGMQLFGKSYLDNVKKISTTGNLPRWHMNDFFHSFLIIFRILCGEWIETM
WDCMEVAGQPLCLLVFLLVMVIGNLVVLNLFALLSSFSADNLSAPDEDGEMNNLQLAF
ARINRGLQYVKHTTWDFCCNVLRHPKTTAEKKAMMKLAAQNTGALNNCVNSHPTAELGKE
MENHKENHTEDGTNKNVEKHLGITDNDDFMTNPDSLICVPIAVGESDIEEEDEEQSTFTE
MEQQEKQLQLRGQRCQSPGARSONSEICEELSELHVDKQLKAEP PPVQGKELDEISLSE
GSTVDLTNPAELLEQIPEFAEELMEPEDCFPEVCVRFFPCCSVDISKFPGKIWWRLRKT
YRIVEHNWFETFIIFMILLSSGALAFEDIYLEDNRNIKTMLEYADKIFTYIFVLEMLLKW
VAYGFKKYFTNAWCWLDLIVDVSLISLIANTLGYSEMGPISLRTLRLRPLRALSFE
GMRVVVNALVGAIPSIMNVLLVCLIFWLIFSIMGVNLFAGKFGKCINKTEGDMPLDSKII
NNMTDCILYNVSGTFYWTKVKNFDNVGAGYLALLQVATFKGWMDIMYAAVDSRECEEQP
EWEENLYMYLYFVIFIFGSFFTLNLFIVIIDNFNQKKKLGGQDIFMTEEQKKYYNAM
KKLGSKKPQKPIRPLNKYQGFIQFVVSQAFDVSIMILICLNMTMMVETDDQSQEKVN
ILHKINMLFVAIFTGECIFKMLALRHYYFTNGWNIFDFVVVLSIVGTVLSDIIQKYFFS
PTLFRVIRLARIGRILRLIRGAKGIRTLFALMMSLPALFNIGLLLFLVMFIYAIFGMAN
FAYVKKEYGIDDMFNFQTFANSMLCLFQITTSAGWDGLLNPILNTGPPYCDPNLPNANGS
KGDCGSPAUGILFFVYIIISFLIVVNMYIAIILENFSVATEESTEPLSEDDFDMFYEIW
EKFDPEATQFIEYSALSDFADALSEPLRIAKPNKIKLIAMDLP MVSGDRIHCLDILFAFT
KRVLGESGEMDALKIQMEEKFMAANPSKISYEPITTTLRRKQEEVSAIVIQRAYRRHLFR
RSMKQASYLYRHRTFDGSILEDDAPEKEGLIAFMMNENYGRPDKSETLSSTSFPPSYDS
VTRGTSENQLKLTDSSRTDEAIDCLLSPDRDKESIV

Chicken SCN5A Paralog 1: SCN10A-201 Ancestry: Amniota

>SCN10A_Chicken

KMADFLPGTNNFRKFTPESLAAIEKRIAARKDHQKSTLDQKPEEKPRPQLDLKAFQKLP
ALYGNPPPELIGEPLEDLPYKDRKIFIVLNKQKTIFRFTATRALWILSPFHPIRRAAI
KISIHSLFTWFIICTIITNCVMAQNESSRSSPSWNRFTFTGIYTFESLIKILARGFCL
NEFTFLRDPWNWLDIFSIIIMAFVGAFSNLGSVSVLRTFRVLRALKTISVVPGLKIIVGAL
IQSVKKLANVMILTVFCLSVFALIGLQLFKGNLRYKCVKKNHTDSTIRDFLQNSLYEHFA
IKPGTSDVLLCGPGAGSRTCPEHTCKQIGPNPDYGFTSFDTFGWAFSLFRLMTQDYWE
RLYQQTLRASGKVYILFFMLVIFLGSFYLVNLILAVVTMAYEDQNKATIAETEAKEKFR
EAMELLQKEQESLTAKGIDILSISSFEGSPLSAKEIKERSNRKKRNKSLGIEECEEQFP
KSQLTDSQRKLSLLGLLYGPNANQVKRRLSHGSVFNFIQIPAFEVDSKADSADEEAHSTGE
NKIQGRSMSPVQVGRRSSMPSQKSHGSHPATPSCMQSSKWANTDDCNGMISVMGGGHVME
DLGKSDLLSVEYFNETFQRQRAASAVSIITSVLEELEESQKCPFLKDFAFKYLIWNCC
PLWLRIKKKVAAFIDPFIDLTITLCIVMNTLFMALEHNNMTENFKLMLKVGNLIFTGIF
TAEMVLKIIALDPYFFQQPWNIFDSIIVTSLIELSLPRQRGKKERRKGGTLSVLSFR
LLRVFKLAKSWPTLNTLIKIIGNSLGALSNTLVLAIIVFIFAIVGVQLFGGSYRTYGDK
IKKNGEIRWHMMDFFHSFLVIFRILCGEWIETMWDCMVVAEKPLCLLVFLLVMVIGNLVV
LNLFIALLNSFSTDCLQTAEDDREMNNLRIAFARIHKGLRFVKSVMWDTCCGKLKHLKK
AHRKKNKLT AQNPLGLGKERKNCKDNYNIEWAEKNGEICSGLDDFITNPNVFCVPIAEE
ENTSEGFEDDKLSTFSDTEYSKQEEHHLRQRGERGKTSGSWSKVSGLSSEEFVLYLGK
DRKVESSPPEHKENFDSVSSSEGSTVDLTNPEDLLRQIPEFAEDKKTPEKCFSEGCVRYP
HCKGRAVNFGGKTWWNLKTCYQIVEHSWFESFIVFMILLSSGVLA FEDIHINERRTIK
AILSFLDRLFTFVFLEMILKWVAYGFNKYFTNAWCWLDLIVGVSCASSISTHILGSSL
DGVKSLRTLRLRPLRLRSRFEGMRVVVNALVGAIPSIMNVLLVCLIFWLIFSIMGVNLF
AGKFGKCVNLTEENSELDSSINDIADCKAWNHTGKIFWVNVKVNFDNVGSGYLALLQVAT
FKGWMEIMYAAVDSREKDEQPKMEYNLFMYLYFVNFIIFGSFFTLNLFVGVIIDNFNQKQ
KKLGGEDIFMTEEQKKYYNAMKRLGSKKPQKPIPRPLNRYQGFLDIVTNQAFDITIMIL

ICLNMVTMMVETYEQSDMKTNVLNKINILFVTIFSTECVLKLVALRQYYFSNAWNIFDIV
VVIMSIVALLLSGIGKAFEHFLPPTLFRVIRLARIGRILRLIRAAKGIRTLLFALMMSLP
ALFNIGLLLFLVMFIYAIFGMANFAYVKMEDGIDDMFNFQTFANSMLCLFEITTSAGWDG
LLSPILNTGPPYCDPNITGSIGECGKPAIGIVYFVSYIIISFLIVVNMYIAVILENFNAA
TEESTEPLGEDDFDIFYEWEKFDPEATQFITFSALSDFADALAEPLRVKPNKIELIAM
DLPMVSGDRIHCLDILFAFTKRVLGDSGEMDVLKVQMEDKFMVNPSPKKSYPEISTTLRH
RQEEVSATVIQRAYRSHLLQRSIKHASLYHHRTYSGDTLGDAAPEREGLIASMMGENYG
RNLDESQTSSSASLPPSYDSVTRASSGNLIVENEFTEDDTVNTHNLRPLSPL

Chicken SCN5A Paralog 2: SCN11A-201 Ancestry: Amniota

>SCN11A_Chicken

MEPLFWPLETISFQRFTPESLAAIEKKIAEKKEKQAKLKQETTDQEVEEDKVTPQLDLKT
CKKLPSLYGDVPAELIGELEDLPYSDHRTFMVINKRRTIFRFTATPALCILGPFNPI
RKA AIKILHSLFVG FITCTVILNCASMAMNNYPLDFNGTEHIFTAIYTG EILIKVLARG
LVWNEFTFLRDPWNVLDLVLVVTYIIICTKSGNISALRTFRVLR TLKAISVIPGLKVIV
NSLIESVKKLTDVLILT VFCLSIFALIGLQLFMGNLKNKCVLTNATYNDTLCKDAKIYNS
SETGKYYYYICARMNGTSDILLCGYGGNSTGECPENYTCLKLGNPDFGYTSFDHFGWAF
LSLFRLMTQDSWERLYRQTIRSSGKSYILFFIAVIFLCSFYLFNLILAVVTMAYEEQNRA
TLAETQAKEKLLQDAKKVLEKEKMLSTGESN KASHIGFEMSVAGLENSEEKETRGEKPVS
RQSLIVGNQSN ESMFQSQPNHCHKLRQILL SYELSVDSINDPYRRQRLMSAATVITDN
MKAQNSKMRFASVWKRLGQKYLIWNCCPFWRAVKGKVQ LIALDPVVDLIIMICIIVNTIF
MALEHPGMTST EKR LICISDKVFTMVFAAEMVLKIIALDPY YFQQKWNIFDSIVVMIGL
ISFHANLSFFRLLRIFKLAKMWPALNTLMKIILNSVGALGNLTLVLIITVFIFAVVGKQV
LGKYYATEFNKISTTANLRWHMKDFYHSFLVIFRILCGEWIETMWECMEVAGQERCLPIF
LLVLVIGNLVVLNLFIALLLSSFSTDSL GQEEAVKQSKCEIAIARIHKGLQSVKERILD
KCGKKREQSNNTTTKKKTSVKTSFKDLERNNYAMTDVGKMDMNSCFDVG CYNNEESSSVE
RKYEGSLNYHGGHIPLAVAEAYTDEGDDDEQSACTEGEYRKWGF DVGSYSEASTVDPVTL

IELYSQPKIHLPKDCCAESCVKYFPCCNVDITKFPGSTWWKFRKTCYKIVKHSWFENFI
IFVIVLSSAALAFEDIHLKDRKTVKKLLEYADMVFTYIFIMEMLLKWVAYGLHSYFTNAW
CWLDFIIVCVSIIYIYNLLCCREIGALKSLRTLRLRPLRALS RFEGIKVVVNALLGAI
PSILNVLLVCVFWLLFNIVGVKLLGQKFWKCVLKTGDNREVQNINDCRNYGGKWTNSYV
NFDHVGMYLALLQVATFKGWMDIMYAAVDARQIDEQPQFEACSAMYFYFVIFIFGSFF
MLNLFIVGVVISNFNQQRKKGGKDLFLTEEQKKYYNALKKLGSKKPQKPIRPLNAFQGFF
FDIVSHKAFDISVVTLICLNMVVMMAESDNGEVRDVLKKINYFFVTFTGECIIKIALR
HYFFTGWNI FDLVVVVL SLVSIALAEVFSKFFSPTLLRIIRLARIGRILRLVKRAKGIR
TLLFALLMSLPSLFNIGLLLFLVMFIYAIVGMTNFACLGWEGGIDNLFNFQTFDSSILCL
FQITTSAGWDSLLSPVLKESETCAPNVPQNNSSCRNKVVGITFFVSYVIISFLIVVNMYI
AVILENFSVATEESADPLSEDDFDMFYETWGNFDPQATQFIEYSALSDFADALAEPLRIP
KPNTIQLISMDLPIVSGDKIHCLDILLAFTKRVLGEAGNFEGLELHMEЕКFMAANPSKVS
YKPITTTLKRKQEEVSALVIQRAFRRHLLQRSLEHKPFLHCRRRFNSAVYAEEMREKDGL
IASMRGENYGRKLDKSQTTSSISLPLFYDGIAGTDTNKVDT

Chicken SCN5A Paralog 3: SCN4A-201 Ancestry: Euteleostomi

>SCN4A_Chicken

MAGLPYIPGPENLRPFTPASLAAIEQRIAEAEALKLKKQQVEMPEEEELKPSSDLEAGKN
LPLIYGDPPLELIGTPLEDLPFYKDKKTFIVLNKGKSIFRFSATPALYLLGPFNPIRRG
AIKVLHSYCKLFSMFIMITILTNCVFM TSNPPAWSKNVEYTFTGIYTFESLIKILSRG
FCIDDFTLRDPWNWLD FMVISMAYITEFVDLGNISALRTFRVLRALKTITVIPGLKTIV
GALIQSVKKLSDVMILTVFCLSVFALIGLQLFMGNLRHKCVRWPPLNDTLMGDFGLDNTT
LANATLYGNFTDGIDGNFTSNSTFD FEAYINDEANFYFLDGALDALLCGNSSDAGKCPEG
YECMKAGRNPNYGYTSYDTFSWAFSLFRLMTQDFWENLFQLTLRAAGKTYMIFFVVVIF
LGSFYLINLILAVVAMAYAEQNDATMLEAQQKEEEFQQLMEQLKKHQEEQEQVGGKEEG
LSETDTGSTGRQQRGAAAHNMQIRLKGGEEQGRHQNNQSQYCTSR AESLAEHLHVQIAVRV

GKKHTREIGWLQQSKPFAFGQHWKLNTSASCLSPGVLNESVLQRLMFSTRQRCYALVNYS
PCPNSNHVRFWEVQTAVMEMWLLQLQDRQSSSSSLHSSAAGKKSDSLNSDQDKAKDCNG
QVVPKVVLQRSATVIEFNPANETEKSDSNHLTVGNQDGPGLKRVGSAVSVISNTMEELE
EAHQKCPSWWYKFAHTFLVWDCCYPWLKLKQFVKLVVMDPFVDLGITICIVLNTLFMAME
HYPMTEEFENVLTVGNLVFTGIFTAEMVLKLIAPYEYFQQGWNIFDSIIVTSLVELGL
ANVQGLSVLRSFRLRVFKLAKSWPTLNMLIKIIGNSVGALGNLTLVLAIIVFIFAVVGM
QLFGKSYMEECVCKISLDCTLPRWMMHDFHFSFLIVFRILCGEWIETMWDCMEVAGQTMCL
IVFMMVMVIGNLVVLNLFALLSSFSADSLAASDDDGEMNNLQIAIGRITRGIDFVKSS
VLMLIRRLWKGGKVAPEEEQEPSKGDNSVLNHVDSSDPKPDYMDGVAGKEYLLMDELH
MNFINNPNLTVQVPIASEESDLYEETSTQSDTEDAKNPLSSDNASSLCSTVDYKPPLPEE
EEVAEEAEESNEPEECFTEGCVKRFPCLHVDITS DRGKIWWNIRKTCFLIVEHDFWETFI
VFMILLSSGALAFEDIYEQRKVIRTILEYADKVFSYIFVIEMLLKWVAYGFKVYFTNAW
CWLDLIVDVSLISLTANWLGYSELGAIKSLRTLRLRPLRALS RFEGMRVVVNALLGAI
PSIMNVLLVCLIFWLIFSIMGVNLFAGKYRCVNTTTGDLFDISVVNNKSDCMALLHTNE
VRWVNKVNFNDNVGLGYLSLLQVATFKGWMDIMYAAVDSREIEEQPVYEINLYMYIYFVI
FIIFGAFFTLNLFIGVIIDNFNQKKKFGGKDIFMTEEQKKYYNAMKKLGSKKPQKPIPR
PSNKFQGMVDFVTKQVFDITIMILICLNMVMTMMVETDDQSETKDILYKINLIFIVIFT
GECVLKMFALRYYYFTIGWNIFDFVVVILSIAGIVLSDIIEKYFVSPTLFRVIRLARIGR
VLRIRGAKGIRTLFALMMSLPALFNIGLLLFLVMFIYSIFGMSNFAYVKKEAGIDDIF
NFETFGNSIICLFQITTSAGWDGLLSPILNSGPPDCDPNLENPGSSIKGNCGNPSIGIFF
FCSYIIISFLIVVNMYIAIILENFNVATEESSEPLCEDDFEMFYEIWEKFDPDATQFIAY
STLSDFVDTLQEPLRIPKPNKIKLITMDLPMVAGDKIHCLDILFALTKEVLGDSGEMDAL
KDTMEEKFMAANPSKVSYPEITTLKRKH EEV CATKIQRAFRRYLLRRSVKQASYMYRHS
KDEEALLGDAPEKEGLIATKMHEIYGNSGTDAEMGAAIDLAPVPSSETQSAPIEAKPPGG
QRVVKESLV

Chicken SCN5A Paralog 4: SCN3A-201 Ancestry: Vertebrata

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MAQALLVPPGPESFRYFTRDSLAAIEKRSAEEKAKKPKQEHTDDDDENGPKPNSDLEAGK
TLPFIYGDIPPGMVSEPLEDLDPPYYINKKTFIVLNKGKAIFRFSATSALYILTPFNPIRK
IAIKILVHSLFSMLIMCTILTNCVFMTMSNPPDWTKNVEYTFTGIYTFESLIKILARGFC
LEGFTFLRDPWNWLD FSVILMAYVTEFVN LGNV SALRTFRVLRALKTISVIPGLKTIVGA
LIQSVKKLSDVMILT VFCLSVFALIGLQLFMGNLRNKCLQWPPDNSTFEINVISYFNSTM
DENGTFINTTVSTFNWKDYIEDETHFYILEGQRDALLCGNSSDAGQCPEGYICVKAGRNP
NYGYTSFDTFSWAFLSLFRLMTQDFWENLYQLTLRAAGKTYMIFVFLVIFLGSFYLINLI
LAVVAMAYEEQNQATMEEAEQKEAEFQQMLEQLKKQQEEAQATAAVAAASVASRDFSGVG
GLGELLESSEASKLSSKSAKERRNRRKRRRQKEMSEAEDKGDIDKFPKSESEDSIRRS
FRFSTEGSQLTYEKRFTHQSLLSIRGSLFSPRRNSKTSIFSFRGRTRDIGSEND FADD
EHSTLEDNESRRDSLFPN RHGERRNSNISQASMSSRVVPALPANGKMHSAVDCNGVVSL
VGGPSTLTSP TGQLLPEGTTTETEIRKRRLSSYQISMEMLEDS AARQRAMS IASILTNTM
EELEESRQKCPPCWYRFANTFLIWDCWSPWLKVKHVVNLVVMDFVDLAITICIVLNTLF
MAMEHYPMTEQFSSVLSVGNLVFTGIFTAEMVLKIIAMDPYFFQEGWNIFDGIIVSLSL
MELGLANVEGLSVLRSFRLRVFKLAKSWPTLNMLIKIIGNSVGALGNLTLVLAIVFIF
AVVGMQLFGKSYKECVCKISSDCVLPRWHMHDFHSHFLIVFRVLCGEWIETMWDCMEVAG
QTMCLIVFMLVMVIGNLVVLNLF LALLSSFS DNLAATDDDNEMNNLQIAVARIQKGID
YIKKKIQEFIQKAFVRKQKALEEIKALEEINNKKDSCISNHTAVEISKDMNYLKDGNGTT
SGVGTGSSVEKYVDES DYMSFINNPGLTVTVPIAVGESDFENLNTEEFSSSDMEESKQ
KLNASSSSEGSTVDIAPPGEGEQAEIEPEEALPEACFTEGCVQKFPCCQVSIEDGKGKI
WWNLRKTCYSIVEHNWFETFIVFMILLSSGALAFEDIYIEQRKTIKTMLEYADKVFTYIF
ILEMLLKWWAYGFQIYFTNAWCWLD FLIVDVSLSLIANALGYSELGAIKSLRTLRLRP
LRALSRFEGMRVVVNALVGAIPSIMNVLLVCLIFWLIFSIMGVNLFAGKFYHCVNTTTGE
MFDVSDVNNTYTQCEELIKNNQSARWKNVKVNF DNVGAGYLALLQVATFKGWMDIMYAAVD
SRDVEDQPKYEDNLYMYLYFVIFIFGSFFT LNLFIGVIIDNFNQKKKFGGQDIFMTEE
QKKYYNAMKKLGSKKPQKPIRPVNKFQGMVDFVTKQVFDISIMILICLNMVTMMVETD
DQSKEMETILSRINLVFIILFTGEFVLKLISLRHYFTIGWNIFDFVVVILSIVGMFLAE

MIEKYFVSPTLFRVIRLARIGRILRLIKGAKGIRTLLFALMMSLPALFNIGLLLFLVMFI
YAIFGMSNFAYVKREVGIDDMFNFETFGNSMICLFQITTSAGWDGLLAPILNSGEPDCDP
HKDHPGSSSVKGDGCPNSVGIFFFVSYIIISFLVVVNMYIAVILENFSVATEESAEPLESD
DFEMFYEVWEKFDPDATQFIEYSKLSDFAAASLDPPLIAKPNKVQLIAMDLPMVSGDRIH
CLDILFAFTKRVLGESGEMDALRIQMEDRFMAANPSKVSYPEPITTLKRKQEEVSALIIQ
RAYRCYLLKQKVKKVSSIYNKNKNNEGDGQVIKETIIDKLNGNSTPEKTESSSTTSPPS
YDSVTKPDKEYEKDKAEKNYKGKDVRENKK

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MLIMCTILTNCVFMTMSNPPDWTKNVEYFTFTGIYTFESLIKILARGFCLEDFTFLRDPWN
WLDFTVITFAYVTEFVDLGNVSALRTFRVLRALKTISVIPGLKTIVGALIQSVKKLSDVM
ILTVFCLSVFALIGLQLFMGNLRNKCLQWPPDNSTFETTVITYFNSSIGENGTFINTTMT
IFNWDEYIEDENHFYFLEGQNDALLCGNSSDAGQCPEGYICVKAGRNPNGYTSFDTFSW
AFLSLFRLMTQDFWENLYQLTLRAAGKTYMIFFFVLVIFLGSFYLINLILAVVAMAYEEQN
QATMEEAEQKEAEFQQMLEQLKKQQEEAQAAAAAADS RDYSGVGGIGGFSESSSEASK
LSSKSAKERRNRRKKKKQKEQAEGEKDEEEFRKSESEDSIKRKGFRFSIEGNRLTYEKRF
SSPHQSLLSIRGSLFSPRRNSRTSLFSFRGRAKDVGSENFADDEHSTFEDNESRRDSL
VPHRHGERRNSNISQASRSSRTVPPLPVNGKMHSTVDCNGVVS LVGGPPALTSP TGQLLP
EGTTTETDLRKRSSSYQVPM DYLTDP SARQRAMSIASMLTNTMEELEESRQKPPC WYK
FANTCLIWDCCTPW LKVKHIVNLIVMDPFVDLAITICIVLNTLFMAMEHYPMTEQFSGVL
SVGNLVFTGIFTAEMFLKIIAMD PYYYYQEGWNIFDGFIVSLSLMELGLANVEGLSVLRS
FRLLRVFKLAKSWPTLNMLIKIIGNSVGALGNLTLVLAII VFIFAVVGMQLFGKSYKECV
CKISSDCELPRWHMHDFH SFLIVFRVLCGEWIETMWDCMEVAGQTMCLTVFMMVMVIGN
LVVLNLF LALLSSFS DNLAATDDD NEMNNLQIAVARIQKGIDFVKRKVREFIQKAFVR
KQKVLDEIKPLEDLNNKKDSCISNHTIVEIGKNLAYLKEGNGTTSIGISSVEKYVDES
YMSFINNPSLTVTVPIAVGESDFENLNTEEFSSSESDLEESKEKLNASSSSEGSTVDIGLP

PEGEQPEVEPEESLEPEACFTEGCVRRFKCCQVSVEDGKGKIWWNLRKTCYKIVEHNWFE
TFIVFMILLSSGALAFEDIYIEQRKTIKTMLEYADKVFTYIFILEMLLKWVAYGFQTYFT
NAWCWLDLIVDVSLVSLTANALGYSELGAIKSLRTLRLRPLRALS RFEGMRVVVNALL
GAIPSIMNVLLVCLIFWLIFSIMGVNLFAGKFYYCVNTTTDERFDISQINNYSQCEELIK
NNETARWKNVKVNFNDNVGLGYLSLLQVATFKGWMDIMYAAVDSRNVLDQPKYEDNLYMYL
YFVIFIIFGSFFTNLFIGVIIDNFNQKKKFQGGQDIFMTEEQKKYYNAMKKLGSKKPQK
PIPRPANKFQGMVFDFVTKQAFDISIMILICLNMTMMVETDDQSEDMENILYWINLVFI
VLFTGEFVLKLISLRHYYFTIGWNIFDFVVVILSIVGMFLAEMIEKYFVSPTLFRVIRLA
RIGRILRLIKGAKGIRTLFLALMMSLPALFNIIGLLLFLVMFIYAIFGMSNFAYVKREVGI
DDMFNFETFGNSMICLFQITTSAGWDGLLAPILNSGEPDCDPHKDHPGSSVKGDGCGNPSV
GIFFFVSYIIISFLVVVNMYIAVILENFSVATEESAEPLEDDFEMFYEVWEKFDPDATQ
FIEFSKLSDFAAASLDPPLLIAPKNKVQLIAMDLPMVSGDRIHCLDILFAFTKRVLGESGE
MDALRIQMEDRFMAANPSKVSYPEITTTTLKRKQEEVSAVVIQRAFRRHLLRQKVKKVSCI
FNQDKGKDEDDLPMKEDMIMDKLNENSTPEKTDMPSTTSPPSYDSVTKPDKDKYEKDKS
EKEDKGKDSRESKK