

Product datasheet for MR226817

Smarca4 (NM_011417) Mouse Tagged ORF Clone

Product data:

Product Type: Expression Plasmids
Product Name: Smarca4 (NM_011417) Mouse Tagged ORF Clone
Tag: Myc-DDK
Symbol: Smarca4
Synonyms: b2b508.1Clo; b2b692Clo; Brg1; HP1-BP72; SNF2beta; SW1/SNF
Vector: pCMV6-Entry (PS100001)
E. coli Selection: Kanamycin (25 ug/mL)
Cell Selection: Neomycin
ORF Nucleotide Sequence: >MR226817 representing NM_011417
Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCC**CGGATCGCC**

ATGTCTACTCCAGACCCACCTTGGGTGGGACTCCTCGGCCTGGTCTTCCCAGGCCCTGGTCTTCAC
CTGGTGAATGCTGGGTCTAGCCCTGGCCCTCACCAGTTCTGCCACAGCATGATGGGGCAAGCCC
AGGACCTCCTTCAGCAGGACATCCCATGCCACCCAGGGGCTGGAGGGTACCCAGGACAACATGCAT
CAGATGCACAAGCCTATGGAGTCCATGCACGAGAAGGGCATGCCTGATGACCCACGATACAACCAGATGA
AAGGGATGGGCATGCGGTGAGGGGCCACACAGGCATGGCACCTCCACCTAGTCCATGGACCAGATTCT
TCAAGGTTACCCCTCACCCCTCGGGCGCTCTGAACATGCCTCCAGTCTGTCCCAGCCAGTGGCCCATCT
TCAGGCCCCAGATGTCTCTGGGCCAGGAGGGGCCCCACTAGATGGTTCTGATCCCCAGGCCTTGGGAC
AGCAAAACAGAGGCCCAACCCATTTAACCAGAACCAGCTGCATCAACTCAGAGCTCAGATAATGGCCTA
CAAGATGTTGGCCAGGGGCCAGCCATTGCCCGACCCTGCAGATGGCCGTGCAAGGCAAGCGGCCGATG
CCTGGAATGCAGCAACAGATGCCAACACTACCTCACCCCTCAGTGTCCGCCACAGGACCCGGACCTGGAC
CCGGCCCTGGCCCTGGCCCTGGCCAGGACCAGCCCTCCAATTACAGTAGACCCCATGGTATGGGAGG
GCCCAACATGCCTCCCCAGGACCTCAGGTGTGCCCCCGGGATGCCTGGTCAGCCGCTGGAGGGCCT
CCCAAGCCATGGCCTGAAGGACCATGGCCAATGCTGCTGCCCCACAAGCACCCACAGAAGCTGATTC
CTCCGCAACCAACAGGCCGTCCTTACCTGCACCTCCTGCTGTCCCGCTGCTGCCTCACCTGTAATGCC
ACCACAAACACAGTCCCCAGGGCAGCCAGCCAGCCTGCTCCATTGGTGCCTACTGCACCAGAAGCAGAGC
CGAATCACCCCATCCAGAAGCCCGAGGCCTTGACCCTGTGGAGATCCTACAAGAGCGGGAGTACAGGC
TTCAGGCTCGAATCGCACACAGAATTGAGAACTTGAACCTCCCTGGGTCCCTGGCTGGGGACCTTCG
AACCAAAGCAACCATCGAACTCAAGGCCCTTAGGTTGCTGAACTCCAGAGGCAGCTGCGCCAGGAGGTG
GTGGTGTGCATGCGAAGAGACACAGCCCTGGAGACAGCCCTCAATGCCAAGGCCTACAAGCGCAGCAAAC
GTCACTACTACGGGAGGCCGATCACTGAGAAGTTGGAGAAGCAGCAGAAGATTGAACAGGAGCGCAA
GCGCCGCCAGAAGCACCAGGAGTACCTCAACAGCATTCTGCAGCATGCCAAGGACTTCAGGGAGTATCAC
AGATCAGTCACAGGCAAACCTCCAGAACTCACCAAGGCTGTGGCCACCTACCATGCCAACACTGAGCGGG



AGCAGAAGAAAGAAAATGAGCGCATTGAGAAGGAGCGAATGCGGAGGCTTATGGCTGAAGATGAGGAGGG
 CTACCGCAAACCTCATTGACCAGAAGAAGGACAAGCGCCTGGCCTACCTTCTGCAGCAGACAGATGAGTAT
 GTGGCCAAACCTCACAGAGCTGGTGCGGCAGCACAAAGCTGCCAGGTTGCCAAGGAGAAGAAGAAAA
 AGAAAAAGAAGAAGGCAGAAAATGCTGAAGGACAGACCTGCTATTGGACCAGATGGTGAGCCTCTGGA
 TGAGACCAGCCAGATGAGTGACCTCCCTGTGAAGGTGATCCACGTGGAGAGTGGCAAGATCCCTACTGGC
 ACAGATGCCCAAAGCCGGGCAGCTGGAAGCCTGGCTTGAATGAACCCAGGGTATGAAGTAGCCCCCA
 GGTCAGACAGTGAAGAAGTGGCTCTGAAGAGGAGGAGGAGGAGGAAGAGGAGCAGCTAGCCCCGC
 ACAGCCCCCTACACTGCCTGTGGAAGAAAAGAAGATTCCAGACCCAGACAGCGATGATGTCTCTGAG
 GTGGACGCCCGACACATTATTGAGAACGCCAAGCAAGATGTGGACGATGAGTACGGTGTGTCCCAGGCC
 TTGCTCGTGGCCTGCAGTCTTACTATGTGTGGCCCATGCAGTCACAGAGAGAGTAGATAAGCAGTCCGC
 CCTCATGGTCAACGGTGTCTCAAACAGTACCAGATCAAGGGTTTGGAGTGGCTGGTGTCCCTGTACAAC
 AACAACTGAATGGCATCCTGGCTGATGAGATGGGGCTGGGGAAGACCATCCAGACCATCGCGCTCATCA
 CATACTCATGGAGCACAAGCGCATCAACGGGCCCTTCTCATCATCGTGCCTCTCTCGACTGTCAA
 CTGGGCGTATGAATTTGACAAGTGGGCCCTCTGTGGTGAAGGTTTCTACAAGGGCTCTCCAGCTGCA
 AGCGGAGCTTTTGTCCCAGCTTCGCAGTGGGAAGTTCACGTCTTACTGACCACCTATGAATATATCA
 TCAAAGACAAGCATATCCTAGCCAAGATCCGCTGGAAGTACATGATTGTGGATGAAGGCCACCGCATGAA
 AAACCACCACTGCAAGTTGACGCAGTCCCTAACACACACTACGTGGCCCCCTCGGCGCCTGCTTCTTACA
 GGCACACCACTGCAGAACAAGCTACCGGAGCTCTGGGCCCTGCTTAACTTCTGCTCCCCACTATCTTCA
 AGAGCTGCAGCACCTTCGAACAGTGGTTCAATGCACCCTTTGCCATGACTGGAGAAAAGGTGGACCTGAA
 TGAAGAGGAGACTATCCTCATTATTCGTGCGCTACACAAAGTTCTGCGGCCCTTCTGCTGCGGCGGCTC
 AAGAAGGAAGTTGAAGCCAGCTCCCTGAGAAGGTAGAGTATGTCATCAAATGCGACATGTCAGCCCTGC
 AGCGTGTGCTGTACCGTCACATGCAGGCCAAAGGTGTGCTGCTGACTGACGGCTCCGAGAAGGACAAGAA
 GGGCAAAGGTGGCACAAGACACTGATGAACACTATTATGCAACTGCGTAAGACTGCAACCACCCTAC
 ATGTTCCAGCACATCGAGGAGTCTTTTTCTGAGCACTTGGGGTTACCGGCGGCATCGTGCAAGGATTGG
 ACCTTTACCGTGCCTCAGGGAAATTTGAACTTCTTGATAGAATTCTACCCAAACTCCGTGCAACGAACCA
 TAAAGTGTCTCTTTTTGCCAAATGACCTCCCTCATGACCATCATGGAAGACTACTTTGCATACCGTGGC
 TTCAAATACCTCAGGCTTGATGGAACCACAAAAGCAGAAGACCGGGGCATGCTGTTGAAAACCTTTAATG
 AACCTGGCTCTGAGTATTTCAATTTCTGCTCAGTACCCGTGCTGGGGGGCTGGGCTGAATCTGCAGTC
 AGCTGACACTGTGATCATCTTTGACAGTACTGGAATCCCCACCAGGACCTGCAAGCACAGGATCGAGCC
 CATCGCATTGGACAGCAGAATGAGGTGCGTGTCTTCCGCTGTGCACGGTCAACAGTGTGGAAGAGAAGA
 TACTGGCTGCTGCCAAATACAACTCAATGTGGATCAGAAGGTGATCCAGGCAGGCATGTTCCAGCAGAA
 GTCGTCCAGCCATGAGAGGCGTGCCTTCCCTGCAGGCCATCCTGGAGCACGAGGAGCAGGATGAGGAGGAA
 GATGAGGTGCCTGATGATGAGACCGTCAACCAGATGATTGCCCGGCACGAAGAAGAGTTTACCTCTTCA
 TGCGCATGGACTTGGACCGCCGCGTGAAGAAGCCCGCAACCCCAAGCGGAAGCCACGCCTGATGGAAGA
 GGATGAGCTCCCATCCTGGATCATCAAGGATGATGCCGAGGTGGAGCGGCTGACATGTGAAGAGGAAGAG
 GAGAAGATGTTTCGGCCGTGGTTCTCGCCACCGCAAGGAGGTAGACTACAGCGACTCACTGACAGAGAAGC
 AGTGGCTCAAGGCTATCGAGGAGGGCACGCTGGAGGAGATCGAAGAGGAGGTCCGGCAGAAGAAATCTTC
 ACGTAAGCGTAAGCGAGACAGCGAGGCCGCTCCTCCACCCCGACCACCAGCACCAGCCGAGCCGTGACAAG
 GATGAGGAGAGCAAGAAGCAGAAGAAACGTGGGCGGCCACCTGCTGAGAAGCTGTCCCAAAACCCACCTA
 ACCTACCAAGAAGATGAAGAAGATCGTGGATGCTGTGATCAAGTACAAAGACAGCAGCAGTGGACGTCA
 GCTCAGCGAGGTGTTTATCCAGCTCCCCTCTCGAAGGAGCTTCTGAGTACTATGAGCTCATCCGAAAG
 CCTGTGGACTTCAAGAAGATCAAGGAACGCATCCGAAACCACAAGTACCGCAGCCTCAATGACCTGGAGA
 AGGATGTGATGCTGTGCCAGAACGCTCAGACGTTCAACCTCGAGGGTTCCCTGATCTATGAGGACTC
 CATCGTCTCAGTCTGTCTTACCAGCGTACGGCAGAAGATTGAGAAGGAGGACGACAGTGAAGGCGAG
 GAAAGCGAGGAGGAGGAGGGCGAGGAGGAAGGCTCCGAGTCTGAGTCCCGCTCCGTCAAGGTGAAGA
 TCAAGCTGGGCCCAAGGAGAAGGCCAGGACCGACTCAAGGGGGGCCCGCGCGGCCAAGCCGGGGATC
 CCGGGCAAGCCGTTGTGAGTGACGATGACAGTGAAGGAGGAGCAGGAGGAGGACCGCTCAGGAAGTGGC
 AGTGAGGAAGAC

ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT
 ACAAGGATGACGACGATAAGGTTTAA

Protein Sequence: >MR226817 representing NM_011417
 Red=Cloning site Green=Tags(s)

MSTDPPLGGTPRPGSPGPGSPGAMLGPSGPGSPGSAHSMGPPSPGPPSAGHPMPTQGGPGYPQDNMH
 QMHKPMESMHEKGMPDDPRYNQMKGMGRSGAHTGMAPPSPMDQHSQGYPSPLGGSEHASSPVPASGSPS
 SGPQMSSSGPGAPLDGSDPQALGQONRGPTPFNQNLHQLRAQIMAYKMLARGQPLPDHLQMAVQKSRPM
 PGMQQQMPPLPPPSVSATGPGPGPGPGPGPGPAPPNYSRPHGMGGPNMPPPGSPGVPPGMPGQPPGGP
 PKPWPEGPMANAAAPTSTPQKLIPPQTPGRSPAPPVPPAASPVMPPQTQSPGQPAQPAPLVPLHQKQS
 RITPIQKPRGLDVEILQEREYRLQARIAHRIQELENLPGSLAGDLRTKATIELKALRLLNFQRQLRQEV
 VVCMRRDTALETALNAKAYKRSKRQSLREARITEKLEKQKQIEQERKRRQKHQEYLNLSILQHAQDFREYH
 RSVTGKQLKLTAVATYHANTEREQKKENERIEKERMRLMAEDEEGYRKLIDQKKDKRLAYLLQQTDEY
 VANLTELVRQHKAAQVAKEKKKKKKKAENAEGQTPAIGPDGEPLDETSQMSDLPVKVIHVESGKILTG
 TDAPKAGLEAWLEMNPGYEVAPRSDSEESGSEEEEEEEEEEQPQAQPPTLPVEEKKKIPDPDSDVSE
 V DARHIIENAKQVDDEYGVSQLARGLQSYAVAHAVTERVDKQSALMVNGVLKQYQIKGLEWLVSLYN
 NNLNGILADEMGLKTIQTIALITYLMEHKRINGPFLIIVPLSTLSNWAYEFDKWAPSVVKVSYKGSAA
 RRAFVPLRSGKFNVLTTYEYI IKDKHILAKIRWKYMI VDEGHRMKNHHCKLTQVLNTHYVAPRLLLLT
 GTPLQNKLPPELLNLLPTIFKSCSTFEQWFNAPFAMTGEKVDLNEEETILIRRLHKVLRPFLRLR
 KKEVEAQLPEKVEYVIKCDMSALQRVLYRHMQAQGVLLTDGSEKDKKGGGKTLMNTIMQLRKICNHPY
 MFQHIEESFSEHLGFTGGIVQGLDLYRASGKFELLDRIPLKLRATNHNKVLFFCQMTSLMTIMEDYFAYRG
 FKYLRLDGTTKAEDRGMLLKTNEPGESEYFIFLLSTRAGGLGNLQSADTVIIFDSDWNPHQDLQAQDRA
 HRIGQQNEVRVLRCLTVNSVEEKILAAKYKLNVDQKVIQAGMFDQKSSSHERRAFLQAILEHEEQDEEE
 DEVPDDET V NQMIARHEEEFDL FMRMDLDRRREEARNPKRKPRLMEDELPSWIKDDAEVERLTCEEEE
 EKMFGRGSRHRKEVDYSDSLTEKQWLKAIIEEGTLEEIEEEVROKKSSRKRKRDEAGSSTPTTSTRSRDK
 DEESKKQKGRPPAEKLSNPNNLTKMKKIVDAVIKYKDSSSGRQLSEVFIQLPSRKLPEYYELIRK
 PVDFKKIKERIRNHKYSRLNDEKDVMLLCQNAQTFNLEGLSIVLQSVFTSVRQKIEKEDDSEGE
 ESEEEEEEGESESESRSVKVLIKLRKEKAQDRLKGGRRRPSRGSRAKPVVSDDDSEEEQEEDRSGSG
 SEED

TRTRPLEQKLI SEEDLAANDILDYKDDDDKV

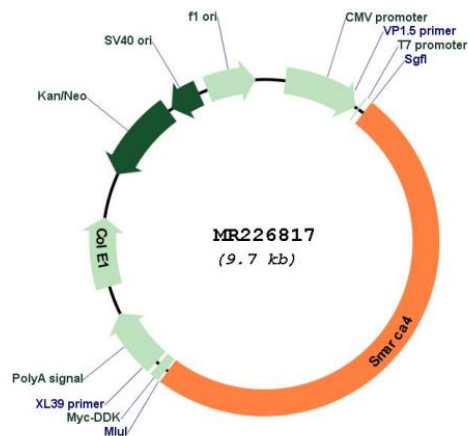
Restriction Sites:

SgfI-MluI

Cloning Scheme:



Plasmid Map:



ACCN: NM_011417

ORF Size: 4842 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_011417.3](#), [NP_035547.2](#)

RefSeq Size: 6367 bp

RefSeq ORF: 4845 bp

Locus ID: 20586
UniProt ID: [Q3TKT4](#)
Cytogenetics: 9 7.84 cM
MW: 182 kDa

Gene Summary: Involved in transcriptional activation and repression of select genes by chromatin remodeling (alteration of DNA-nucleosome topology). Component of SWI/SNF chromatin remodeling complexes that carry out key enzymatic activities, changing chromatin structure by altering DNA-histone contacts within a nucleosome in an ATP-dependent manner. Component of the CREST-BRG1 complex, a multiprotein complex that regulates promoter activation by orchestrating the calcium-dependent release of a repressor complex and the recruitment of an activator complex. In resting neurons, transcription of the c-FOS promoter is inhibited by SMARCA4-dependent recruitment of a phospho-RB1-HDAC repressor complex. Upon calcium influx, RB1 is dephosphorylated by calcineurin, which leads to release of the repressor complex. At the same time, there is increased recruitment of CREBBP to the promoter by a CREST-dependent mechanism, which leads to transcriptional activation. The CREST-BRG1 complex also binds to the NR2B promoter, and activity-dependent induction of NR2B expression involves the release of HDAC1 and recruitment of CREBBP (By similarity). Belongs to the neural progenitors-specific chromatin remodeling complex (npBAF complex) and the neuron-specific chromatin remodeling complex (nBAF complex). During neural development, a switch from a stem/progenitor to a postmitotic chromatin remodeling mechanism occurs as neurons exit the cell cycle and become committed to their adult state. The transition from proliferating neural stem/progenitor cells to postmitotic neurons requires a switch in subunit composition of the npBAF and nBAF complexes. As neural progenitors exit mitosis and differentiate into neurons, npBAF complexes which contain ACTL6A/BAF53A and PHF10/BAF45A, are exchanged for homologous alternative ACTL6B/BAF53B and DPF1/BAF45B or DPF3/BAF45C subunits in neuron-specific complexes (nBAF). The npBAF complex is essential for the self-renewal/proliferative capacity of the multipotent neural stem cells. The nBAF complex along with CREST plays a role in regulating the activity of genes essential for dendrite growth. SMARCA4/BAF190A may promote neural stem cell self-renewal/proliferation by enhancing Notch-dependent proliferative signals, while concurrently making the neural stem cell insensitive to SHH-dependent differentiating cues. Acts as a corepressor of ZEB1 to regulate E-cadherin transcription and is required for induction of epithelial-mesenchymal transition (EMT) by ZEB1 (By similarity). Binds via DLX1 to enhancers located in the intergenic region between DLX5 and DLX6 and this binding is stabilized by the long non-coding RNA (lncRNA) Evf2 (PubMed:26138476). Binds to RNA in a promiscuous manner (PubMed:26138476). Binding to RNAs including lncRNA Evf2 leads to inhibition of SMARCA4 ATPase and chromatin remodeling activities (PubMed:26138476).[UniProtKB/Swiss-Prot Function]