

Product datasheet for **MG224152**

Smarca2 (NM_011416) Mouse Tagged ORF Clone

Product data:

Product Type:	Expression Plasmids
Product Name:	Smarca2 (NM_011416) Mouse Tagged ORF Clone
Tag:	TurboGFP
Symbol:	Smarca2
Synonyms:	2610209L14Rik; brahma; brm; SNF2alpha; Snf2l2
Mammalian Cell Selection:	Neomycin
Vector:	pCMV6-AC-GFP (PS100010)
E. coli Selection:	Ampicillin (100 ug/mL)
ORF Nucleotide Sequence:	>MG224152 representing NM_011416 Red=Cloning site Blue=ORF Green=Tags(s)

TTTTGTAATACGACTCACTATAGGGCGGCCGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC
GCC**CGATCGCC**

ATGTCCACACCCACAGACCCAGCAGCAATGCCCATCCTGGGCCCTCCCGGGCCTGGACCCTCTCCTG
GACCAATTCTGGGGCCTAGTCCAGGACCAGGACCATCCCAGGTTCTGTGCACAGCATGATGGGTCTAG
TCCCGGACCTCCAGCGTCTCACATCCTGTCAACGATGGGCTCTGCAGACTTCCACAGGAAGGCATG
CACCAATTACATAAGCCCATGGATGGGATACATGACAAAGGATTGTAGAAGATGCCACTGTGGATCCA
TGAAGGGCACCAGCATGCGCCCCACACCCAGGAATGGGCCCTCCACAGAGCCCATGGACCAGCACAG
CCAAGTTATATGTCACCACATCCGTCTCCTCTGGGAGCCCCGGAGCACGTCTTAGCCCTATATCTGGA
GGAGGCCCAACCCACCCAGATGCCACCGAGCCAGCCAGGGGCACTCATCCAGGAGATCCGCAGGCCA
TGAACCAGCCTAACAGAGGTCCCTCGCCTTTCAGTCTGTGCAGCTGCATCAGCTTCGAGCTCAGATTTT
AGCTTACAAAAATGTTGGCCAGGGGCCAGCCTCTCCCTGAAACTCTGCAGCTGGCAGTCCAGGGAAAAAGG
ACCTTGCTGGCATGCAGCAGCAGCAGCAACAACAACAGCAGCAGCAGCAGCAGCAGCAGCAGCAGC
AGCAACAGCAGCAACAACAGCAGCCCCAGCAGCCTCAGCAGCAGGCTCAGGCACAGCCCCAGCAGCAGCA
GCAACAGCAGCAGCAGCCAGCTCTTGTAGCTATAATCGACCATCTGGCCCCGGGCAGGAGCTGCTACTG
AGTGGCCAGAGCGCTCCGAGAAGCTGTCAGCACCAGCACCAAGCGGCCGACCTTACCGGCACCCAGG
CCGCCGTCCAGCCCACGGCCACAGCGGTGCCCGGCCCTCCGTGCAGCAGCCCCAGGCCAGGGCAGCCGTC
TCCGGTCTACAGCTGCAACAGAAGCAGAGCCGCATCAGCCCCATCCAGAAACCGCAAGGCTGGACCCG
GTGGAGATCCTGCAGGAACGAGAGTACAGACTTCAAGCTCGCATCGCTCATAGGATACAAGAACTGGAAA
GTCTGCCTGGTTCCTTGCCACCAGATTTACGCACCAAGCAACCGTGGAAGTCAAAGCACTTCGCTTACT
CAACTTCAAACGTCAGCTGAGACAGGAGGTGGTGGCCTGCATGCGGAGGGACACCACCTGGAGACGGCC
CTCAACTCAAAGCATATAAGCGGAGCAAGCGCCAGACCTGCGTGAGGCACGCATGACAGAGAACTGG
AGAAGCAGCAGAAGATAGAACAGGAGAGGAAACCGGCCAGAAACACCAGGAATACCTGAACAGTATTTT
GCAACATGCAAAAAGATTTAAGGAATATCACCGGTCTGTGGCCGGAAGATCCAGAAGCTCTCAAAGCA



[View online »](#)

GTGGCGACTTGCCATGCTAACACAGAAAGGGAGCAGAAGAAGGAGACGGAGCGGATCGAGAAGGAGAGAA
 TGGCGAGGCTGATGGCCGAAGATGAAGAGGGCTACAGGAAGCTTATTGACCAAAAAGAACAGACGCTCT
 CGCCTACCTATTGCAGCAGACCGATGAGTATGTCGCCAATCTGACCAACCTGGTGTGGGAGCACAAGCAG
 GCCAAGCAGCCAAAGAGAAGAAGAAGAGGAGGAGGAGGAAGAAGAAGGCTGAAGAGAATGCAGAGGGAG
 GGGAACTGCCCTGGGACCAGATGGAGAGCCAAATAGATGAAAGCAGCCAGATGAGTGACCTGCCTGTCAA
 AGTGACACACAGAAACTGGCAAGTCTCTTTGGACCAGAAGCACCAAAAGCAAGTCACTGGATGCC
 TGGCTGGAGATGAATCCTGGTTACGAAGTTGCACCCAGATCTGACAGTGAAGAGAGTGAATCGGACTACG
 AGGAGGGAGATGAAGAAGAAGAGTCCAGTAGGCAGGAAAACCGAGGAGAAGATACTGCTGGATCCCAACAG
 TGAAGAAGTTTCCGAAAAGGATGCCAAGCAGATCATTGAGACTGCGAAGCAGGACGTGGACGACGAATAC
 AGCATGCAGTACAGTGCCAGAGGCTCTCAGTCTACTACACGGTGGCTCACGCTATCTCTGAGAGGGTGG
 AGAAGCAGTCTGCCCTCCTCATTAAACGGCACCCCTAAAGCATTACCAGCTCCAGGGCTGGAATGGATGGT
 TTCCCTGTATAATAACAATCTGAACGGAATCTTAGCTGATGAAATGGGGCTAGGCAAGACCATCCAGACC
 ATTGCACTCATCAGTATCTGATGGAGCACAAAAGGCTCAATGGTCCCTACCTCATCATCGTCCCTCTCT
 CGACTCTGTCTAACTGGACATATGAATTTGACAAATGGGCTCCTTCTGTGGTGAATAATTTCTTACAAGG
 TACCCCTGCCATGCGACGCTCCCTCGTTCCCGAGCTACGGAGTGGCAAATCAATGTCCTCTGACTACT
 TACGAGTACATTAAAAAGACAAGCACATTTCTTCAAAGATTCGGTGAAGTACATGATCGTGGACGGAAG
 GCCACCGGATGAAGAATCACCCTGCAAGCTAACCAGGTCTGAACACACACTATGTGGCCCCAGGCG
 GATCCTTCTGACTGGGACCCACTGCAGAATAAGCTTCCGGAACCTCTGGGCCCTCCTCAACTTCTCCTC
 CCTACAATCTTCAAGAGTTGCAGCACATTTGAGCAGTGGTTAATGCTCCATTTGCCATGACCGGTGAAA
 GGGTGGACCTGAACGAAGAAGAAACGATTTTGTATCATCAGGCGTACACAAGGTGCTGAGACCTTTTT
 ACTGAGGAGGCTGAAGAAAGAGGTTGAGTCTCAGCTTCCGAAAAGGTTGAGTATGTGATCAAGTGTGAC
 ATGTGAGTCTGCAGAAGATTCTGTACCGTACATGCAAGCCAAGGGGATCCTCCTCACGACGGGTCTG
 AGAAAGATAAGAAGGGGAAAGGAGGTGCCAAGACACTTATGAACACCATCATGCAGCTGAGAAAAATATG
 CAACCACCCATATGTTTCAGCACATTGAGGAATCCTTTGCTGAACACCTGGGCTATTGGAATGGGGT
 ATCAATGGGGCTGAGCTGTATCGGGCTCGGAAAAGTTTGTGCTGCTTGTATCGTATTCTGCCAAATTTGA
 GAGCGACTAACCCCGCTGCTGCTTTTCTGCCAGATGACGCTCACTCATGACCATTATGGAGGATTACTT
 TGCTTTTCCGAACTTCTGTACCTGCGCCTTGACGGCACCAAGTCTGAAGATCGTGTGCTTTTGCTA
 AAGAAATTCATGAACCTGGGTCCAGTATTTTCTTTTCTTGTGAGCACAAGAGCAGGGGGCTGGGCT
 TAAATCTTCAAGCGGCAGACACGGTGGTCAATTTGACAGCGACTGGAATCCTCACCAGGATCTGCAGGC
 CCAAGACCGAGCTCACCGCATTGGCCAACAAAACGAGGTCCGGGTGCTGAGGCTTTGCACCGTCAACAGT
 GTGGAGGAAAAGATTCTCGCGGCTGCCAAGTACAAGCTGAACGTGGATCAGAAGTTATCCAAGCAGGCA
 TGTTTGACAGAAAGTATCCAGCCACGAGCGGAGGGCCTTCTGCAAGGCCATTCTGGAGCACGAGGAGGA
 GAATGAGGAAGAAGATGAGGTACCAGACGACGAGACCCTGAACCAGATGATTGCTCGCCGGGAGGAAGAA
 TTTGATCTTTTTATGCGCATGGACATGGACCGGCGGAGGGAGGATGCCCGGAACCCGAAGCGCAAACCC
 GCTTGTGAGGGAAGATGAGTGCCTCCTGGATTATCAAGGATGACGCCGAAGTGGAAAGGCTCACCTG
 TGAAGAAGAGGAGGAGAAGATATTTGGGAGGGCTCTCGCCAGCGCCGGGATGTGGACTACAGTATGCC
 CTCACCGAGAAGCAATGGCTCAGGGCCATCGAAGACGGCAATTTGGAAGAAATGGAAGAGGAGGTACGGC
 TTAAGAAGAGAAAAGACGAAGAAATGTGGATAAAGACCCCGTGAAGGAAGATGTGGAAAAAGCGAAGAA
 AAGAAGAGGCGCCCTCCGGCTGAGAAGTTGTACCAAATCCCCAAAATAACGAAGCAGATGAACGCC
 ATCATTGATACTGTGATAAACTACAAAGACAGTTCAGGGCGACAGCTCAGTGAAGTCTTCACTTACGTTAC
 CTTCAGGAAAAGACTTACCAGAATACTATGAATTAATTAGGAAGCCAGTGGATTTCAAAAAGATAAAGGA
 GCGAATCCGTAATCATAAGTATCGGAGCCTGGGAGACCTGGAGAAAGACGTATGCTTCTCTGTCAAC
 GCACAGACATTCAACTTGGAAAGGATCCCAGATCTACGAAGACTCCATTGCTTACAGTCACTGTTTAAAG
 GTGCTCGGCAGAAAATTGCCAAGAAGAAGAGAGTGAAGGAAGAAAGCAATGAAGAAGAGGAAGAAGATGA
 TGAAGAGGAGTCGGAGTCAGAGGCGAAAATCTGTGAAGGTGAAAATCAAGCTGAATAAAAAGGAAGAGAAA
 GGCCGGGACACAGGGAAGGGCAAGAAGCGGCCAAACCGAGGCAAGCCAAACCCGTCGTGAGCGATTTTG
 ACAGTGACGAGGAACAGGAAGAGAACGAACAGTCAAGAAGCAAGTGAAGTGAATGATAACGAG

ACGCGTACGCGGCCGCTCGAG - GFP Tag - GTTTAA

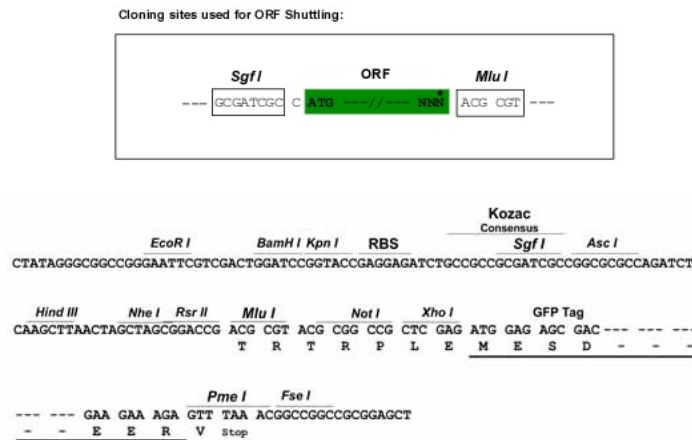
Protein Sequence: >MG224152 representing NM_011416
 Red=Cloning site Green=Tags(s)

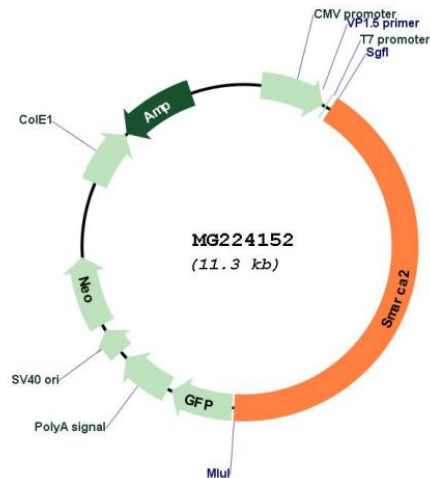
```
MSTPTDPAAMPHPGPSPGPGSPGPILGSPGPGSPGSPGSHMMGSPGPPSVSHPLSTMGSADFPQEGM
HQLHKPMDGIHDKGIVEDVHCGSMKGTSMRPPHPGMGPPQSPMDQHSQGYMSPHPSPLAGAPEHVSSPISG
GGPTTPQMPPSQPGALIPGDPQAMNQPNRGPSPFSPVQLHQLRAQILAYKMLARGQPLPETLQLAVQGKR
TLPGMQQQQQQQQQQQQQQQQQQQQQQQQQQQQQQPQQQAQAPQQQQQQQQQPALVSYNRPSGPGQELLL
SGQSAPQKLSAPAPSGRPSAPQAQAVQPTATAVPGPSVQQPAPGQPSPVLQLQQKQSRISPIQKPGQLDP
VEILQEREYRLQARIAHRIQELESPLGSLPPDLRTKATVELKALRLNFRQLRQEVVACMRRDTTLETA
LNSKAYKRSKRQTLREARMTEKLEKQKQIEQERKRRQKHQEYLNLSILQHAKDFKEYHRSVAGKIQLSKA
VATWHANTEREQKETERIEKERMRLMAEDEEGYRKLIDQKDRRLAYLLQQTDEYVANLTNLVWEHKQ
AQAAKEKKRRRRKKAEEAEGGEPALGPDGEPIDESSQMSDLPVKVTHTETGKVLFGPEAPKASQLDA
WLEMNPGYEVAPRSDSESESDYEEDEEEESSRQETEEKILLDPNSEEVSEKDAKQIIETAKQDVDEY
SMQYSARGSQSYTVAHAISERVEKQSALLINGTLKHYLQGLEWVSLYNNNLNGILADEMGLKGTIQT
IALITYLMEHKRLNGPYLIIIVPLSTLSNWTYEFDKWAPSVVKISYKGTAMPRRSLVPQLRSGKFNLLTT
YEYI IKDKHILAKIRWKYMI VDEGHRMKNHHCKLTQVLNTHYVAPRRILLTGTP LQNKLPELWALLN FLL
PTIFKSCSTFEQWFNAPFAMTGERVDLNEEETILIRRLHKVLRPFLRLRLKKEVESQLPEKVEYVICKD
MSALQKILYRHMQAKGILLTDGSEKDKKGGAKTLMNTIMQLRKICNHPYMFQHIIEESFAEHLGYSNGV
INGAELYRASGFELDRILPKLRATNHRVLLFCQMTSLMTIMEDYAFRNFLYLRLDGTTKSEDRAALL
KKFNEPGSQYFIFLLSTRAGGLNLQAADTVVIFDSDWNP HQDLQAQDR AHRIGQQNEVRVLR LCTVNS
VEEKILAAKYKLNVDQKVIQAGMFDQKSSSHERRAFLQAI LHEEEENEEDEVPDDEL NQMIARREEE
FDLFMRMDMRRREDARNPKRKPRLMEDELPSWIKDDAEVERL TCEEEEEKIFGRGSRQRD VDYSDA
L TEKQWLRAIEDGNLEEMEEVRLKRRKRRRNVDKDPVKEDVEKAKRRGRPPAEKLSNP PKLTKQMNA
I IDTVINYKDSSGRQLSEVFIQLPSRKDLPEYYELIRKPVD FKKIKERIRNHKYRSLGDLEKDVMLLCHN
A QTFNLEGSQIYEDSIVLQSVFKSARQKIAKEEESEEE SNEEEEDDEEESESEAKSVKVIKLNKKEEK
GRDTGKGGKRPNRGKAKPVVSDFDSDDEEQEENEQSEASGTDNE
```

TRTRPLE - GFP Tag - V

Restriction Sites: SgfI-MluI

Cloning Scheme:



Plasmid Map:


ACCN: NM_011416

ORF Size: 4749 bp

OTI Disclaimer: Due to the inherent nature of this plasmid, standard methods to replicate additional amounts of DNA in *E. coli* are highly likely to result in mutations and/or rearrangements. Therefore, OriGene does not guarantee the capability to replicate this plasmid DNA. Additional amounts of DNA can be purchased from OriGene with batch-specific, full-sequence verification at a reduced cost. Please contact our customer care team at custsupport@origene.com or by calling 301.340.3188 option 3 for pricing and delivery.

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_011416.2](#), [NP_035546.2](#)

RefSeq Size: 5831 bp

RefSeq ORF: 4752 bp

Locus ID: 67155

UniProt ID: [Q6DIC0](#)

Cytogenetics: 19 21.17 cM

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. Binds DNA non-specifically (PubMed:22952240, PubMed:26601204). 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 regulating the activity of genes essential for dendrite growth. [UniProtKB/Swiss-Prot Function]