

## Product datasheet for **MC224756**

### Smarca4 (NM\_001174078) Mouse Untagged Clone

#### Product data:

**Product Type:** Expression Plasmids  
**Product Name:** Smarca4 (NM\_001174078) Mouse Untagged Clone  
**Tag:** Tag Free  
**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  
**Fully Sequenced ORF:** >MC224756 representing NM\_001174078  
Red=Cloning site Blue=ORF Orange=Stop codon

TTTTGTAATACGACTCACTATAGGGCGCCGGGAATTCGTCGACTGGATCCGGTACCGAGGAGATCTGCC  
GCC**GCGATCGCC**

ATGTCTACTCCAGACCCACCTTGGGTGGGACTCCTCGGCCTGGTCTTCCCAGGCCCTGGTCTTCAC  
CTGGTGAATGCTGGGTCTAGCCCTGGCCCTCACCAGTTCTGCCACAGCATGATGGGGCCAAGCCC  
AGGACCTCCTTCAGCAGGACATCCCATGCCACCCAGGGGCTGGAGGGTACCCCAAGACAACATGCAT  
CAGATGCACAAGCCTATGGAGTCCATGCACGAGAAGGGCATGCCTGATGACCCACGATACAACCAGATGA  
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CAAGATGTTGGCCAGGGGCCAGCCATTGCCCGACCCTGCAGATGGCCGTGCAAGGCAAGCGGCCGATG  
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GCCCAACATGCCTCCCCAGGACCTCAGGTGTGCCCCCGGGATGCCTGGTCAGCCGCTGGAGGGCCT  
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AGATCAGTCACAGGCAAACCTCCAGAACTCACCAAGGCTGTGGCCACCTACCATGCCAACACTGAGCGGG



AGCAGAAGAAAGAAAATGAGCGCATTGAGAAGGAGCGAATGCGGAGGCTTATGGCTGAAGATGAGGAGGG  
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 GGTCAGACAGTGAAGAAAGTGGCTCTGAAGAGGAGGAGGAGGAGGAAGAGGAGCAGCCTCAGCCCCG  
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 GATGAGGTGCCTGATGATGAGACCGTCAACCAGATGATTGCCCGGCACGAAGAAGAGTTTGACCTTTCA  
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 AGTGGCTCAAGACCCTGAAGGCTATCGAGGAGGGCAGCTGGAGGAGATCGAAGAGGAGGTCCGGCAGAA  
 GAAATCTTACGTAAGCGTAAGCGAGACAGCGAGGCCGGCTCTCCACCCCGACCACCAGCACCCGCGAG  
 CGTGACAAGGATGAGGAGAGCAAGAAGCAGAAGAAACGTGGGCGGCCACCTGCTGAGAAGCTGTCCCCAA  
 ACCCACCTAACCTCACCAAGAAGATGAAGAAGATCGTGGATGCTGTGATCAAGTACAAGACAGCAGCAG  
 TGGACGTGAGCTCAGCGAGGTGTTTCCAGCTCCCTCTCGCAAGGAGTTCCTGAGTACTATGAGCTC  
 ATCCGAAAGCCTGTGGACTTCAAGAAGATCAAGGAACGCATCCGAAACCACAAGTACCGCAGCCTCAATG  
 ACCTGGAGAAGGATGTGATGCTGCTGTGCCAGAACGCTCAGACGTTCAACCTCGAGGGTTCCCTGATCTA  
 TGAGGACTCCATCGTCTGCAGTCTGTCTTACCAGCGTACGGCAGAAGATTGAGAAGGAGGACGACAGT  
 GAAGGCGAGGAAAGCGAGGAGGAGGAGGAGGGCGAGGAGGAAGGCTCCGAGTCTGAGTCCCCTCCGTCA  
 AGGTGAAGATCAAGCTGGGCCGCAAGGAGAAGGCCAGGACCGACTCAAGGGGGCCGCCGCGGCCAAG  
 CCGGGGATCCCGGCCAAGCCGGTTGTGAGTGACGATGACAGTGAAGGAGGAGCAGGAGGAGGACCGCTCA  
 GGAAGTGCAGTGAAGGAGCTGA

ACGCGTACGCGGCCGCTCGAGCAGAACTCATCTCAGAAGAGGATCTGGCAGCAAATGATATCCTGGATT  
 ACAAGGATGACGACGATAAGGTTTAA

<b>Restriction Sites:</b>	Sgfl-Mlul
<b>ACCN:</b>	NM_001174078
<b>Insert Size:</b>	4854 bp
<b>OTI Disclaimer:</b>	Our molecular clone sequence data has been matched to the reference identifier above as a point of reference. Note that the complete sequence of our molecular clones may differ from the sequence published for this corresponding reference, e.g., by representing an alternative RNA splicing form or single nucleotide polymorphism (SNP).
<b>Components:</b>	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).
<b>Reconstitution Method:</b>	<ol style="list-style-type: none"><li>1. Centrifuge at 5,000xg for 5min.</li><li>2. Carefully open the tube and add 100ul of sterile water to dissolve the DNA.</li><li>3. Close the tube and incubate for 10 minutes at room temperature.</li><li>4. Briefly vortex the tube and then do a quick spin (less than 5000xg) to concentrate the liquid at the bottom.</li><li>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.</li></ol>
<b>RefSeq:</b>	<u><a href="#">NM_001174078.1</a></u> , <u><a href="#">NP_001167549.1</a></u>
<b>RefSeq Size:</b>	6376 bp
<b>RefSeq ORF:</b>	4854 bp
<b>Locus ID:</b>	20586
<b>UniProt ID:</b>	<u><a href="#">Q3TKT4</a></u>
<b>Cytogenetics:</b>	9 7.84 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. 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]

Transcript Variant: This variant (1) lacks an alternate in-frame exon and uses an alternate in-frame splice junction compared to variant 4. The resulting isoform (1) has the same N- and C-termini but is shorter compared to isoform 4.