



SMARCA4

Rabbit Monoclonal Antibody (Mab)
Catalog # APA423

Specification

SMARCA4 - Product Information

Application IHC
Primary Accession P51532
Host Rabbit
Clonality Monoclonal
Calculated MW 184646 Da

SMARCA4 - Additional Information

Gene ID 6597 Gene Name SMARCA4

Other Names

Transcription activator BRG1, 3.6.4.-, ATP-dependent helicase SMARCA4, BRG1-associated factor 190A, BAF190A, Mitotic growth and transcription activator, Protein BRG-1, Protein brahma homolog 1, SNF2-beta, SWI/SNF-related matrix-associated actin-dependent regulator of chromatin subfamily A member 4, SMARCA4, BAF190A, BRG1, SNF2B, SNF2L4

Dilution

IHC~~1:100~500

Storage Maintain refrigerated at 2-8°C for up to 2

weeks. For long term storage store at -20°C in small aliquots to prevent

freeze-thaw cycles.

Precautions SMARCA4 is for research use only and not

for use in diagnostic or therapeutic

procedures.

SMARCA4 - Protein Information

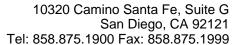
Name SMARCA4 (HGNC:11100)

Synonyms Function BAF190A, BRG1, SNF2B, SNF2L4

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

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 calciumdependent 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. 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. 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 (By similarity). Acts as a corepressor of ZEB1 to regulate E-cadherin transcription and is required for induction of epithelial-mesenchymal transition (EMT) by **ZEB1.** Binds via **DLX1** to enhancers located in the intergenic region between DLX5 and DLX6 and this binding is stabilized by the



Tel: 858.875.1900 Fax: 858.875.1999



Cellular Location

Tissue Location

long non-coding RNA (IncRNA) Evf2 (By similarity). Binds to RNA in a promiscuous manner (By similarity). Binding to RNAs including IncRNA Evf2 leads to inhibition of **SMARCA4 ATPase and chromatin** remodeling activities (By similarity). **Nucleus** {ECO:0000255|PROSITE-ProRule:PRU00549 , ECO:0000269|PubMed:20418909}. Note=Colocalizes with long non-coding RNA Evf2 in nuclear RNA clouds. {ECO:0000250|UniProtKB:Q3TKT4} Colocalizes with ZEB1 in E-cadherin-negative cells from established lines, and stroma of normal colon as well as in de- differentiated epithelial cells at the invasion front of colorectal carcinomas (at protein level).

SMARCA4 - Protocols

Provided below are standard protocols that you may find useful for product applications.

- Western Blot
- Blocking Peptides
- Dot Blot
- <u>Immunohistochemistry</u>
- <u>Immunofluorescence</u>
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

SMARCA4 - Images