10320 Camino Santa Fe, Suite G
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SMARCA4 Antibody
Rabbit Polyclonal Antibody
Catalog # ABV11149

Specification

SMARCA4 Antibody - Product Information

Application	**WB**
Primary Accession	P51532
Reactivity	**Human, Mouse, Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit IgG**
Calculated MW	**184646**

SMARCA4 Antibody - Additional Information

Gene ID 6597

Positive Control	**Western Blot: Various cell lysates**
Application & Usage	**Western blot: 1:500 – 1:2000, IHC: 1:50 – 1:200.**

Other Names
BAF190, BRG1, FLJ39786, SNF2, SNF2BETA, SNF2L4, SNF2LB, SWI2, hSNF2b.

Target/Specificity
SMARCA4

Antibody Form
Liquid

Appearance
Colorless liquid

Formulation
100 µg of antibody in 100 µl PBS containing 0.02% sodium azide, 50% glycerol, pH 7.3

Handling
The antibody solution should be gently mixed before use.

Reconstitution & Storage
-20 °C

Background Descriptions

Precautions
SMARCA4 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

SMARCA4 Antibody - Protein Information

Name SMARCA4

Synonyms BAF190A, BRG1, SNF2B, SNF2L4

Function
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. 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 long non-coding RNA (lncRNA) Evf2 (By similarity). Binds to RNA in a promiscuous manner (By similarity). Binding to RNAs including lncRNA Evf2 leads to inhibition of SMARCA4 ATPase and chromatin remodeling activities (By similarity). In brown adipose tissue, involved in the regulation of thermogenic genes expression (By similarity).

Cellular Location
Nucleus {ECO:0000255|PROSITE-ProRule:PRU00549, ECO:0000269|PubMed:20418909, ECO:0000269|PubMed:25593309} Note=Colocalizes with long non-coding RNA Evf2 in nuclear RNA clouds (By similarity). Localizes to sites of DNA damage (PubMed:25593309) {ECO:0000250|UniProtKB:Q3TKT4, ECO:0000269|PubMed:25593309}

Tissue Location
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).

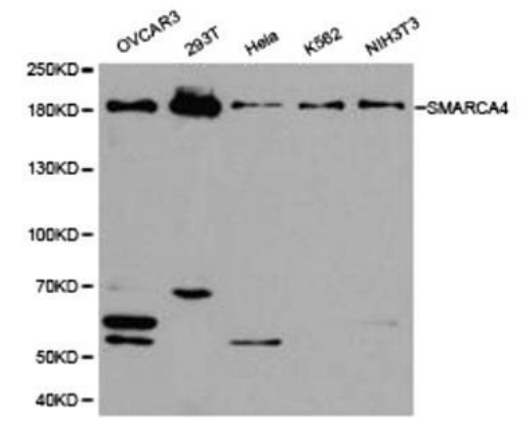
SMARCA4 Antibody - Protocols

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

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- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

SMARCA4 Antibody - Images



WB of various cell extracts with SMARCA4 pAb.

SMARCA4 Antibody - Background

The modulation of chromatin structure is an essential component in the regulation of transcriptional activation and repression. Modifications can be made by at least two evolutionarily conserved strategies, through the disruption of histoneDNA contacts by ATPdependent chromatin remodelers, or by histone tail modifications including methylation and acetylation. One of the four classes of ATPdependent histone remodelers is the SWI/SNF complex, the central catalytic subunit of which is Brg1 or the highly related protein hBRM. This SWI/SNF complex contains varying subunits but its association with either Brg1 or hBRM remains constant. SWI/SNF complexes have been shown to regulate gene activation, cell growth, the cell cycle and differentiation. Brg1/hBRM has been shown to regulate transcription through enhancing transcriptional activation of glucocorticoid receptors. Although usually associated with transcriptional activation, Brg1/hBRM have also been found in complexes associated with transcriptional repression including with HDACs, Rb and Tif1β. Brg1/hBRM plays a vital role in the regulation of gene transcription during early mammalian embryogenesis. In addition, Brg1/hBRM also plays a role as a tumor suppressors and Brg1 is mutated in several tumor cell lines.