10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

SMARCA4 Antibody
Catalog # ASC11784

Specification

SMARCA4 Antibody - Product Information

Application	**WB**
Primary Accession	P51532
Other Accession	NP_001122321, 6597
Reactivity	**Human, Mouse, Rat**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**IgG**
Calculated MW	**Predicted: 185 kDa** **Observed: 200 kDa KDa**
Application Notes	**SMARCA4 antibody can be used for detection of SMARCA4 by Western blot at 1 - 2 µg/ml. Antibody can also be used for Immunohistochemistry at 2 µg/mL. For Immunoflorescence start at 20 µg/mL.**

SMARCA4 Antibody - Additional Information

Gene ID **6597**

Target/Specificity
SMARCA4 antibody was raised against a 19 amino acid peptide near the carboxy terminus of human SMARCA4.

The immunogen is located within amino acids 1420 - 1470 of SMARCA4.

Reconstitution & Storage
SMARCA4 antibody can be stored at 4℃ for three months and -20℃, stable for up to one year.

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).

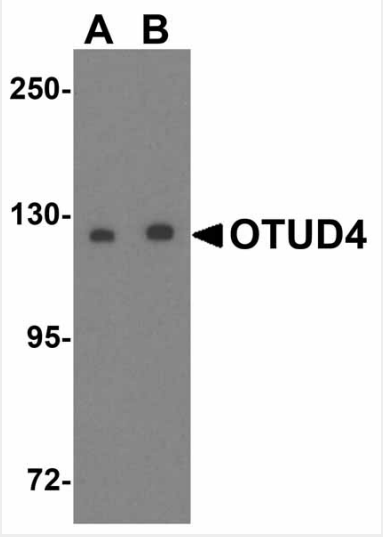
SMARCA4 Antibody - Protocols

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

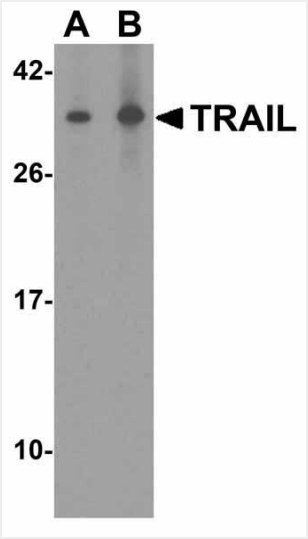
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

SMARCA4 Antibody - Images

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Western blot analysis of OTUD4 in Daudi cell lysate with OTUD4 antibody at (A) 0.25 and (B) 0.5 µg/mL.



Western blot analysis of TRAIL in human brain tissue lysate with TRAIL antibody at (A) 2.5 and (B) 5 µg/mL.

SMARCA4 Antibody - Background

The SWI/SNF related matrix associated actin dependent regulator of chromatin subfamily a member 4 (SMARCA4) protein, also known as BRG1, is a member of the SWI/SNF family of proteins and is similar to the brahma protein of Drosophila (1). Members of this family have helicase and ATPase activities and are thought to regulate transcription of certain genes by altering the chromatin structure around those genes (2). The encoded protein is part of the large ATP-dependent chromatin remodeling complex SNF/SWI, which is required for transcriptional activation of genes normally repressed by chromatin (3). In addition, this protein can bind BRCA1, as well as regulate the expression of the tumorigenic protein CD44 (4,5).

SMARCA4 Antibody - References

Muchardt C and Yaniv M. A human homologue of Saccharomyces cerevisiae SNF2/SWI2 and Drosophila brm genes potentiates transcriptional activation by the glucocorticoid receptor. EMBO J. 1993; 12:4279-90.

Wilson BG and Roberts CW. SWI/SNF nucleosome remodellers and cancer. Nat. Rev. Cancer 2011; 11:481-92.
Bultman S, Gebuhr T, Yee D, et al. A Brg1 null mutation in the mouse reveals functional differences among mammalian SWI/SNF complexes. Mol. Cell 2000; 6:1287-95.
Bochar DA, Wang L, Beniya H, et al. BRCA1 is associated with a human SWI/SNF-related complex: linking chromatin remodeling to breast cancer. Cell 2000; 102:257-65.