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KD-Validated Anti-SMARCA4 Rabbit Monoclonal Antibody

Rabbit monoclonal antibody
Catalog # AGI1707

Specification

KD-Validated Anti-SMARCA4 Rabbit Monoclonal Antibody - Product Information

Application	**WB, FC, ICC**
Primary Accession	P51532
Reactivity	**Rat, Human, Mouse**
Clonality	**Monoclonal**
Isotype	**Rabbit IgG**
Calculated MW	**Predicted, 185 kDa , observed , 185 kDa KDa**
Gene Name	**SMARCA4**
Aliases	**SMARCA4; SWI/SNF Related, Matrix Associated, Actin Dependent Regulator Of Chromatin, Subfamily A, Member 4; BRG1; Mitotic Growth And Transcription Activator; ATP-Dependent Helicase SMARCA4; SNF2-BETA; HSNF2b; BAF190; SNF2LB; SNF2L4; SNF2; SWI2; Global Transcription Activator Homologous Sequence; Sucrose Nonfermenting-Like 4; Transcription Activator BRG1; BRG1-Associated Factor 190A; Protein Brahma Homolog 1; BRM/SWI2-Related Gene 1; Homeotic Gene Regulator; Brahma Protein-Like 1; Nuclear Protein GRB1; Protein BRG-1; SNF2-Like 4; FLJ39786; BAF190A; SWI/SNF-Related Matrix-Associated Actin-Dependent Regulator Of Chromatin Subfamily A Member 4; EC 3.6.4.-; SNF2-Beta; EC 3.6.1; MRD16; RTPS2; SNF2B; CSS4**
Immunogen	**A synthesized peptide derived from human BRG1**

KD-Validated Anti-SMARCA4 Rabbit Monoclonal Antibody - Additional Information

Gene ID	**6597**

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

KD-Validated Anti-SMARCA4 Rabbit Monoclonal Antibody - Protein Information

Name SMARCA4 (HGNC:11100)

Function
ATPase 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 (PubMed:15075294, PubMed:29374058, PubMed:30339381, PubMed:32459350). 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 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 (PubMed:20418909). 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). 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).

KD-Validated Anti-SMARCA4 Rabbit Monoclonal Antibody - Protocols

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

- Western Blot

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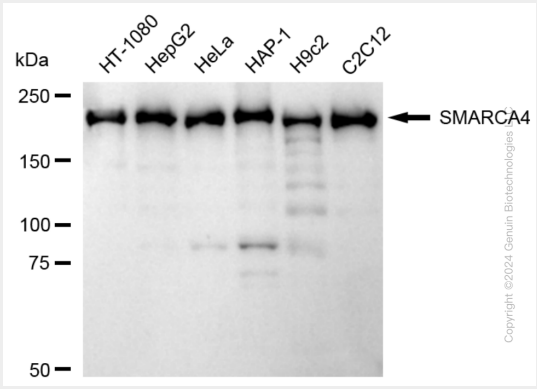
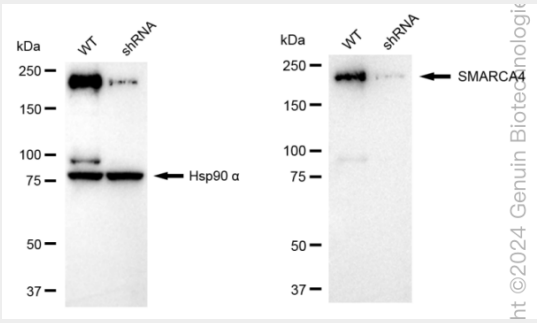
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

KD-Validated Anti-SMARCA4 Rabbit Monoclonal Antibody - Images



Western blotting analysis using anti-SMARCA4 antibody (Cat#AGI1707). Total cell lysates (30 µg) from various cell lines were loaded and separated by SDS-PAGE. The blot was incubated with anti-SMARCA4 antibody (Cat#AGI1707, 1:20,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.



Western blotting analysis using anti-SMARCA4 antibody (Cat#AGI1707). SMARCA4 expression in wild type (WT) and SMARCA4 shRNA knockdown (KD) HeLa cells with 20 µg of total cell lysates. Hsp90 α serves as a loading control. The blot was incubated with anti-SMARCA4 antibody (Cat#AGI1707, 1:20,000) and HRP-conjugated goat anti-rabbit secondary antibody respectively.

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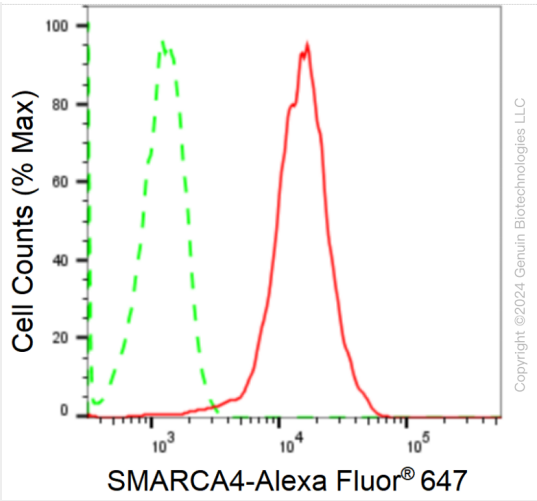
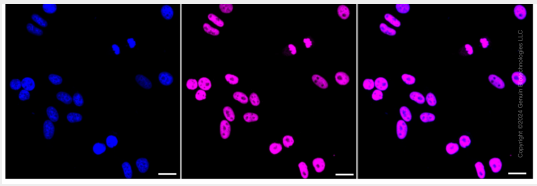


Flow cytometric analysis of SMARCA4 expression in HepG2 cells using anti-SMARCA4 antibody (Cat#AGI1707, 1:2,000). Green, isotype control; red, SMARCA4.



Immunocytochemical staining of HepG2 cells with anti-SMARCA4 antibody (Cat#AGI1707, 1:1,000). Nuclei were stained blue with DAPI; SMARCA4 was stained magenta with Alexa Fluor® 647. Images were taken using Leica stellaris 5. Protein abundance based on laser Intensity and smart gain: High. Scale bar: 20 µm.