

Rabbit SMARCA4 Polyclonal Antibody | anti-SMARCA4 antibody

SMARCA4 Antibody

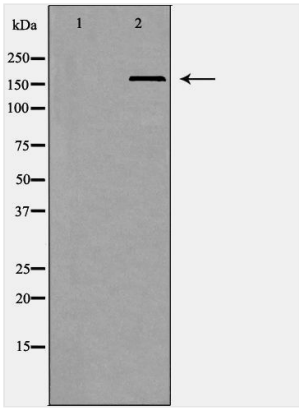
CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA326600	Rabbit	Human, Mouse, Rat	ELISA, Immunohistochemistry, Western Blot

PRODUCT SYNONYMS

SMARCA4; Polyclonal Antibody; SMARCA4 Antibody; ATP dependent helicase SMARCA4; ATP-dependent helicase SMARCA4; BAF 190; BAF190; BAF190A; Brahma protein like 1; BRG1; BRG1 associated factor 190A; BRG1 protein; BRG1-associated factor 190A; BRM/SWI2 related gene 1; Global transcription activator homologous sequence; global transcription activator snf2l4; Homeotic gene regulator; hSNF2b; Mitotic growth and transcription activator; MRD16; Nuclear protein GRB1; Protein brahma homolog 1; Protein BRG-1; Protein BRG1; RTPS2; SMARC A4; SMCA4_HUMAN; SNF2; SNF2 beta; SNF2 like 4; SNF2-beta; SNF2B; SNF2L4; SNF2LB; Sucrose nonfermenting like 4; SWI/SNF related matrix associated actin dependent regulator of chromatin subfamily A member 4; SWI/SNF related; matrix associated; actin dependent regulator of chromatin; subfamily a; member 4; SWI/SNF-related matrix-associated actin-dependent regulator of chromatin subfamily A member 4; SWI2; Transcription activator BRG1; anti-SMARCA4 antibody

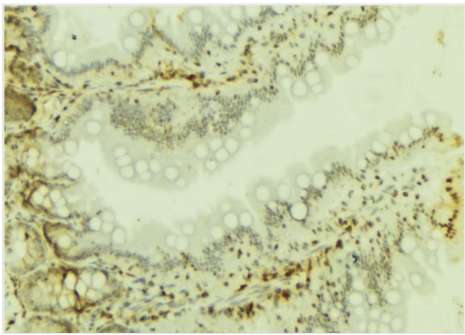
PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human, Mouse, Rat
Clonality	Polyclonal
Isotype	IgG
Specificity	SMARCA4 antibody detects endogenous levels of total SMARCA4
Purity/Purification	The antiserum was purified by peptide affinity chromatography using SulfoLink Coupling Resin.
Form/Format	Liquid Phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Concentration	1mg/ml (varies by lot)
Sequence Length	1647
Applicable Applications for anti-SMARCA4 antibody	ELISA, IHC (Immunohistochemistry), WB (Western Blot)
Immunogen	A synthetic peptide of human SMARCA4
Subcellular Location	Nucleus.
Tissue Specificity	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).
Predicted Cross Reactivity	Pig, Bovine, Horse, Sheep, Rabbit, Dog
Similarity	Pig (100%), Bovine (100%), Horse (100%), Sheep (100%), Rabbit (100%), Dog (100%)
Conjugation	Unconjugated
Preparation and Storage	Store at -20 degree C. Stable for 12 months from date of receipt.



WB (Western Blot)

Western blot analysis of Hepg2 whole cell lysates, using SMARCA4 Antibody. The lane on the left is treated with the antigen-specific peptide.



IHC (Immunohistochemistry)

AAA326600 at 1/100 staining Mouse colon tissue by IHC-P. The sample was formaldehyde fixed and a heat mediated antigen retrieval step in citrate buffer was performed. The sample was then blocked and incubated with the antibody for 1.5 hours at 22 degree C. An HRP conjugated goat anti-rabbit antibody was used as the secondary.

Related Product Information for anti-SMARCA4 antibody

Description: 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 histone-DNA contacts by ATP-dependent chromatin remodelers, or by histone tail modifications including methylation and acetylation. One of the four classes of ATP-dependent histone remodelers is the SWI/SNF complex, the central catalytic subunit of which is Brg1 or the highly related protein hBRM (1). This SWI/SNF complex contains varying subunits but its association with either Brg1 or hBRM remains constant (1). SWI/SNF complexes have been shown to regulate gene activation, cell growth, the cell cycle and differentiation (1). Brg1/hBRM have been shown to regulate transcription through enhancing transcriptional activation of glucocorticoid receptors (2). Although usually associated with transcriptional activation, Brg1/hBRM have also been found in complexes associated with transcriptional repression including with HDACs, Rb and Tif1beta (3-5). Brg1/hBRM plays a vital role in the regulation of gene transcription during early mammalian embryogenesis. In addition, Brg1/hBRM also play a role as a tumor suppressors and Brg1 is mutated in several tumor cell lines (6-8).

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).

Subunit Structure: Component of the multiprotein chromatin-remodeling complexes SWI/SNF: SWI/SNF-A (BAF), SWI/SNF-B (PBAF) and related complexes. The canonical complex contains a catalytic subunit (either SMARCA4/BRG1/BAF190A or SMARCA2/BRM/BAF190B) and at least SMARCE1, ACTL6A/BAF53, SMARCC1/BAF155, SMARCC2/BAF170, and SMARCB1/SNF5/BAF47. Other subunits specific to each of the complexes may also be present permitting several possible developmental-and tissue-specific combinations (PubMed:22952240, PubMed:26601204). Component of the BAF complex, which includes at least actin (ACTB), ARID1A/BAF250A, ARID1B/BAF250B, SMARCA2/BRM, SMARCA4/BRG1/BAF190A, ACTL6A/BAF53, ACTL6B/BAF53B, SMARCE1/BAF57, SMARCC1/BAF155, SMARCC2/BAF170, SMARCB1/SNF5/INI1, and one or more SMARCD1/BAF60A, SMARCD2/BAF60B, or SMARCD3/BAF60C. In muscle cells, the BAF complex also contains DPF3 (PubMed:18765789). Component of neural progenitors-specific chromatin remodeling complex (npBAF complex) composed of at least, ARID1A/BAF250A or ARID1B/BAF250B, SMARCD1/BAF60A, SMARCD3/BAF60C, SMARCA2/BRM/BAF190B, SMARCA4/BRG1/BAF190A, SMARCB1/BAF47, SMARCC1/BAF155, SMARCE1/BAF57, SMARCC2/BAF170, PHF10/BAF45A, ACTL6A/BAF53A and actin. Component of neuron-specific chromatin remodeling complex (nBAF complex) composed of at least, ARID1A/BAF250A or ARID1B/BAF250B, SMARCD1/BAF60A, SMARCD3/BAF60C, SMARCA2/BRM/BAF190B, SMARCA4/BRG1/BAF190A, SMARCB1/BAF47, SMARCC1/BAF155, SMARCE1/BAF57, SMARCC2/BAF170, DPF1/BAF45B, DPF3/BAF45C, ACTL6B/BAF53B and actin. Component of the SWI/SNF-B (PBAF) chromatin remodeling complex, at least composed of SMARCA4/BRG1, SMARCB1/BAF47/SNF5, ACTL6A/BAF53A or ACTL6B/BAF53B, SMARCE1/BAF57, SMARCD1/BAF60A, SMARCD2/BAF60B, perhaps SMARCD3/BAF60C, SMARCC1/BAF155, SMARCC2/BAF170, PBRM1/BAF180, ARID2/BAF200 and actin (PubMed:26601204). Component of the BAF53 complex, at least composed of BAF53A, RUVBL1, SMARCA4/BRG1/BAF190A, and TRRAP, which preferentially acetylates histone H4 (and H2A) within nucleosomes (PubMed:11839798). Component of the CREST-BRG1 complex, at least composed of SMARCA4/BRG1/BAF190A, SS18L1/CREST, HDAC1, RB1 and SP1 (By similarity). Interacts with PHF10/BAF45A (By similarity). Interacts with MYOG (By similarity). Interacts directly with IKFZ1; the interaction associates IKFZ1 with the BAF complex (PubMed:10204490). Interacts with ZEB1 (via N-terminus) (PubMed:20418909). Interacts with NR3C1, PGR, SMARD1, TOPBP1 and ZMIM2/ZIMP7 (PubMed:9590696, PubMed:12917342, PubMed:15075294, PubMed:16051670). Interacts with (via the bromodomain) with TERT; the interaction regulates Wnt-mediated signaling (PubMed:19571879). Interacts with TBX21 in a KDM6B-dependent manner (By similarity). Interacts with KDM6A and KDM6B (By similarity). Interacts with HNRNPU; this interaction occurs in embryonic stem cells and stimulates global Pol II-mediated transcription (By similarity). Interacts with ACTL6A (PubMed:28649782). Interacts with DLX1 (By similarity).

NCBI AND UNIPROT INFORMATION

NCBI GI #	192807312
NCBI GeneID	6597
NCBI Accession #	NP_001122316.1
NCBI GenBank Nucleotide #	NM_001128844.1
UniProt Accession #	P51532; O95052; Q9HBD3; B1A8Z4; B1A8Z5; B1A8Z6; B1A8Z7; E9PBR8
Molecular Weight	Observed: 185 kDa Predicted: 185 kDa
NCBI Official Full Name	transcription activator BRG1 isoform B
NCBI Official Synonym Full Names	SWI/SNF related, matrix associated, actin dependent regulator of chromatin, subfamily a, member 4
NCBI Official Symbol	SMARCA4
NCBI Official Synonym Symbols	BRG1; CSS4; SNF2; SWI2; MRD16; RTPS2; BAF190; SNF2L4; SNF2LB; hSNF2b; BAF190A
NCBI Protein Information	transcription activator BRG1
UniProt Protein Name	Transcription activator BRG1
UniProt Gene Name	SMARCA4
UniProt Synonym Gene Names	BAF190A; BRG1; SNF2B; SNF2L4; BAF190A

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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