abcam

Product datasheet

Anti-BRG1 antibody [G-SMARCA4-2] - Mouse IgG2a (Chimeric) ab282705

KO VALIDATED Recombinant

5 Images

Overview

Product name	Anti-BRG1 antibody [G-SMARCA4-2] - Mouse IgG2a (Chimeric)
Description	Mouse monoclonal [G-SMARCA4-2] to BRG1 - Chimeric
Host species	Mouse
Tested applications	**Suitable for:** WB, Flow Cyt (Intra) **Unsuitable for:** ICC/IF or IP
Species reactivity	**Reacts with:** Mouse, Rat, Human
Immunogen	Recombinant fragment. This information is proprietary to Abcam and/or its suppliers.
Positive control	WB: Wild-type HAP1, K-562, RAW264.7, and PC12 whole cell lysates. Flow Cyt: K-562, NIH/3T3 cells.
General notes	ab282705 is a mouse monoclonal chimeric antibody. This product is a recombinant monoclonal antibody, which offers several advantages including: - High batch-to-batch consistency and reproducibility - Improved sensitivity and specificity - Long-term security of supply - Animal-free production For more information **see here**. This antibody was developed by the Structural Genomics Consortium and manufactured by Abcam.

Properties

Form	Liquid
Storage instructions	Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C. Avoid freeze / thaw cycle.
Storage buffer	pH: 7.20 Preservative: 0.01% Sodium azide Constituents: 40% Glycerol (glycerin, glycerine), 0.05% BSA, 59% PBS
Purity	Protein A purified

Clonality	Monoclonal
Clone number	G-SMARCA4-2
Isotype	IgG2a

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab282705 in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

Application	Abreviews	Notes
WB		1/1000. Predicted molecular weight: 185 kDa.
Flow Cyt (Intra)		1/100.

Application notes Is unsuitable for ICC/IF or IP.

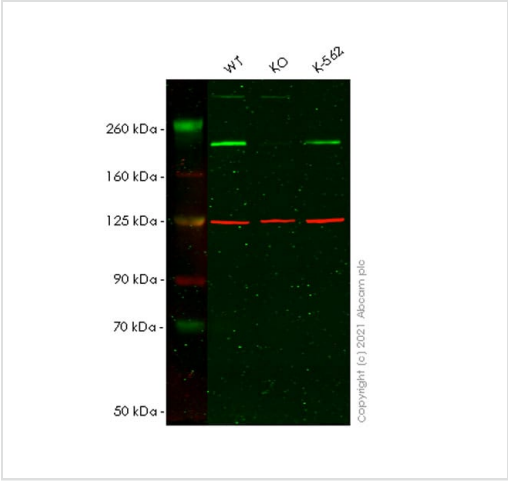
Target

Function Transcriptional coactivator cooperating with nuclear hormone receptors to potentiate transcriptional activation. Component of the CREST-BRG1 complex, a multiprotein complex that regulates promoter activation by orchestrating a calcium-dependent release of a repressor complex and a recruitment of an activator complex. In resting neurons, transcription of the c-FOS promoter is inhibited by BRG1-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 a 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 post-mitotic 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 post-mitotic 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). Also involved in vitamin D-coupled transcription regulation via its association with the WINAC complex, a chromatin-remodeling complex recruited by vitamin D receptor (VDR), which is required for the ligand-bound VDR-mediated transrepression of the CYP27B1 gene. Acts as a corepressor of ZEB1 to regulate E-cadherin transcription and is required for induction of epithelial-mesenchymal transition (EMT) by ZEB1.

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).
Involvement in disease	Defects in SMARCA4 are the cause of rhabdoid tumor predisposition syndrome type 2 (RTPS2) [MIM:613325]. RTPS2 is a familial cancer syndrome predisposing to renal or extrarenal malignant rhabdoid tumors and to a variety of tumors of the central nervous system, including choroid plexus carcinoma, medulloblastoma, and central primitive neuroectodermal tumors. Rhabdoid tumors are the most aggressive and lethal malignancies occurring in early childhood.
Sequence similarities	Belongs to the SNF2/RAD54 helicase family. Contains 1 bromo domain. Contains 1 helicase ATP-binding domain. Contains 1 helicase C-terminal domain. Contains 1 HSA domain.
Post-translational modifications	Phosphorylated upon DNA damage, probably by ATM or ATR.
Cellular localization	Nucleus.

Images



Western blot - Anti-BRG1 antibody [G-SMARCA4-2] - Mouse IgG2a (Chimeric) (ab282705)

All lanes : Anti-BRG1 antibody [G-SMARCA4-2] - Mouse IgG2a (Chimeric) (ab282705) at 1/1000 dilution

Lane 1 : Wild type HAP1(human chronic myelogenous leukemia near-haploid cell line), whole cell lysate
Lane 2 : BRG1 knockout HAP1(human chronic myelogenous leukemia near-haploid cell line), whole cell lysate
Lane 3 : K-562 (human chronic myelogenous leukemia lymphoblast), whole cell lysate

Lysates/proteins at 20 µg per lane.

Secondary
All lanes : Goat Anti-Mouse IgG H&L (IRDye® 800CW) (**ab216772**) and Goat Anti-Rabbit IgG H&L (IRDye® 680RD) (**ab216777**) at 1/10000 dilution

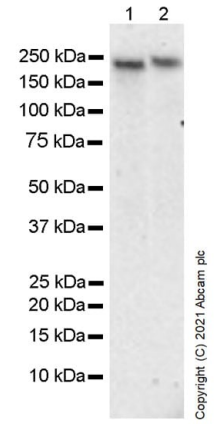
Predicted band size: 185 kDa
Observed band size: 185 kDa

Blocking and diluting buffer and concentration: 3% NFDM/TBST

Lanes 1-3: Merged signal (red and green). Green - ab282705 observed at 185 kDa. Red - loading control **ab129002** observed at 124 kDa.

Lanes 1-2: ab282705 Anti-BRG1 antibody was shown to react with BRG1 in HAP1 cells in Western blot. Loss of signal was observed when BRG1 knockout sample was used. Wild-type and BRG1 knockout samples were subjected to SDS-PAGE.

ab282705 and Anti-Vinculin antibody [EPR8185] (**ab129002**) were incubated at 4°C overnight at 1/1000 dilution and 1/20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 680CW) preadsorbed (**ab216777**) and Goat anti-Mouse IgG H&L (IRDye® 800RD) preadsorbed (**ab216772**) secondary antibodies at 1/10000 dilution for 1 hour at room temperature before imaging.



Western blot - Anti-BRG1 antibody [G-SMARCA4-2] - Mouse IgG2a (Chimeric) (ab282705)

All lanes : Anti-BRG1 antibody [G-SMARCA4-2] - Mouse IgG2a (Chimeric) (ab282705) at 1/1000 dilution

Lane 1 : RAW264.7 (mouse Abelson murine leukemia virus-induced tumor macrophage), whole cell lysate
Lane 2 : PC-12 (rat adrenal gland pheochromocytoma), whole cell lysate

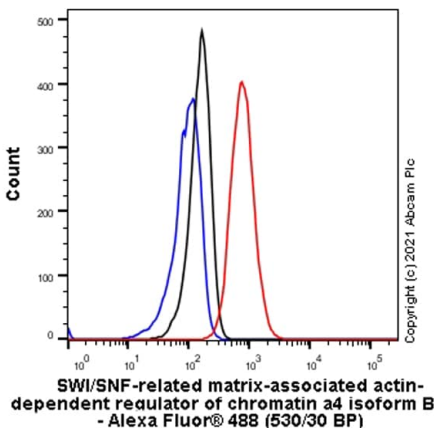
Lysates/proteins at 20 µg per lane.

Secondary
All lanes : Peroxidase-Conjugated Goat anti-Mouse IgG (H+L) at 1/10000 dilution

Predicted band size: 185 kDa
Observed band size: 185 kDa

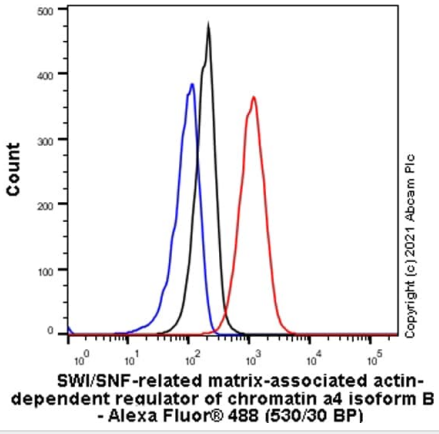
Blocking and diluting buffer and concentration: 5% NFDM/TBST

Exposure time: 3 minutes



Flow Cytometry (Intracellular) - Anti-BRG1 antibody [G-SMARCA4-2] - Mouse IgG2a (Chimeric) (ab282705)

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized K-562 (human chronic myelogenous leukemia lymphoblast) cells labelling BRG1 with ab282705 at 1/100 dilution (1 µg) (Red) compared with a mouse monoclonal IgG (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat anti mouse IgG (Alexa Fluor® 488, **ab150113**) at 1/2000 dilution was used as the secondary antibody.



Flow Cytometry (Intracellular) - Anti-BRG1 antibody [G-SMARCA4-2] - Mouse IgG2a (Chimeric) (ab282705)

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized NIH/3T3 (mouse embryonic fibroblast) cells labelling BRG1 with ab282705 at 1/100 dilution (1 µg) (Red) compared with a Mouse monoclonal IgG (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue). A Goat anti mouse IgG (Alexa Fluor® 488, **ab150113**) at 1/2000 dilution was used as the secondary antibody.

Anti-BRG1 antibody [G-SMARCA4-2] - Mouse IgG2a (Chimeric) (ab282705)

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