abcam

ab108318

Anti-BRG1 antibody [EPR3912]

Anti-BRG1 antibody [EPR3912] (ab108318) is a rabbit monoclonal antibody detecting BRG1 in **Western Blot, Flow Cytometry (Intra), IP, IHC-P, ICC/IF**. Suitable for **Human, Mouse, Rat**.

- KO validated for confirmed specificity
- Biophysical QC for unrivalled batch-batch consistency

Recombinant | RabMAb | Advanced Validation | KO Validated | 20ul selling size

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 - 7.4 Preservative: 0.01% Sodium azide Constituents: PBS, 40% Glycerol (glycerin, glycerine), 0.05% BSA
Form	Liquid
Clonality	Monoclonal
Immunogen	The exact immunogen used to generate this antibody is proprietary information.
Clone number	EPR3912
Purification technique	Affinity purification Protein A
Concentration	0.491 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

ChIC/CUT&RUN-seq

Tested

Species	Human
Dilution info	5 µg
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

IP

Tested

Species	Human, Mouse
Dilution info	-
Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Tested

Species	Mouse
Dilution info	1/100 - 1/500
Notes	Heat up to 98 degrees C, below boiling, and then let cool for 10-20 min. Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Species	Rat
Dilution info	1/100 - 1/500
Notes	Heat up to 98 degrees C, below boiling, and then let cool for 10-20 min.

	Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

Species	Human
Dilution info	1/100 - 1/500
Notes	Heat up to 98 degrees C, below boiling, and then let cool for 10-20 min. Perform heat-mediated antigen retrieval before commencing with IHC staining protocol.

WB

Tested

Species	Mouse
Dilution info	1/1000 - 1/5000
Notes	-

Species	Human
Dilution info	1/1000 - 1/5000
Notes	-

Expected

Species	Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/50
Notes	**For unpurified format use at 1/500 dilution.**

Expected

Species	Mouse, Rat

Dilution info	Use at an assay dependent concentration.
Notes	-

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/20
Notes	-

Expected

Species	Mouse, Rat
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information SMARCA4

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).

Storage

Shipped at conditions	Conditional Ambient
Appropriate short-term storage duration	1-2 weeks
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

Anti-BRG1 antibody [EPR3912] (ab108318) was developed by Abcam using patented rabbit monoclonal antibody technology and is validated for use in ChIC/CUT&RUN-seq, Flow Cyt (Intra), ICC/IF, IHC-P, IP, and WB.

Abcam's high quality manufacturing and validation processes ensure Anti-BRG1 antibody [EPR3912] (ab108318) has high sensitivity and specificity alongside high lot-to-lot consistency and reproducibility.

The specificity of Anti-BRG1 antibody [EPR3912] (ab108318) has been confirmed by Western Blot testing in BRG1 knockout HEK-293T cells (ab263853).

Anti-BRG1 antibody [EPR3912] (ab108318) specifically detects BRG1 (UniProt ID: P51532; Molecular weight: 185kDa) and is sold in 100 µL and 1 mL selling sizes.

Conjugation-ready, carrier free format available for antibody clone EPR3912 - ab222230.

Antibody clone EPR3912 is also available pre-conjugated to a variety of labels for your convenience - Alexa Fluor® 647, Alexa Fluor® 488, PE, APC, HRP, Alkaline Phosphatase, Alexa Fluor® 594, Alexa Fluor® 555, Alexa Fluor® 568, Alexa Fluor® 750 (ab206598, ab206712, ab305626, ab305627, ab305628, ab308772, ab310487, ab312016, ab312493, ab320893).

Validated for CUT&RUN-seq, a key application to map protein-DNA interactions on a genome-wide scale using NGS. Highly specific BRG1 antibody, essential for researchers studying the SWI/SNF complex and chromatin remodeling. BRG1 is widely studied in the context of epigenetic regulation, BRG1 mutations, and cancer research. The BRM/BRG1-containing SWI/SNF complexes are recruited by transcription factors like p53 and BRCA1 to regulate gene activation, cell growth, and differentiation. BRM and BRG1 act as tumor suppressors, with their expression significantly reduced in various cancer cell lines.

Patented technology
Our RabMAb® technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to RabMAb® patents.

What are the advantages of a recombinant monoclonal 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 batch production

For more information, read more on recombinant antibodies.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

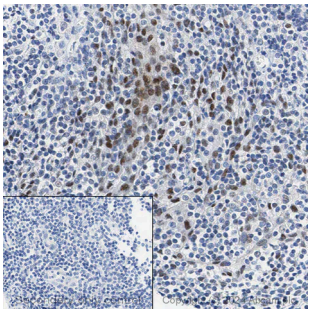
We do not recommend this combination. It is not covered by our product promise.

We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:

17 product images

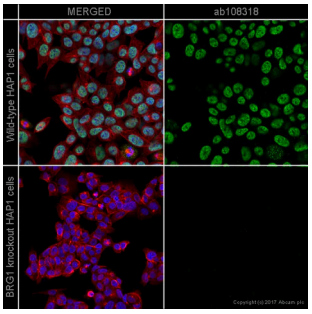


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-BRG1 antibody [EPR3912] (ab108318)

Immunohistochemical analysis of formalin fixed paraffin embedded human tonsil labelling BRG1 with ab108318 at a concentration of 4 µg/ml. The immunostaining was performed on a Ventana DISCOVERY ULTRA (Roche Tissue Diagnostics) instrument with a OptiView DAB IHC Detection Kit. Heat mediated antigen retrieval was performed with DISCOVERY cell conditioning solution (CC1) 100°C, pH8.5 for 32mins.

ab108318 Anti-BRG1 antibody [EPR3912] was incubated for 16mins at 37°C. Sections were counterstained with Hematoxylin II. Image inset shows absence of staining in secondary antibody only control.

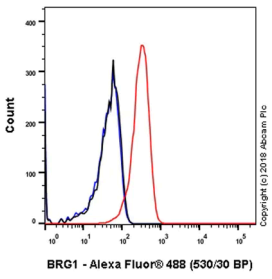
Customers are encouraged to optimise antigen retrieval conditions, antibody concentration, incubation times and temperature for best results in their own IHC assay workflow (automated and manual)



Immunocytochemistry/ Immunofluorescence - Anti-BRG1 antibody [EPR3912] (ab108318)

BRG1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-BRG1 antibody

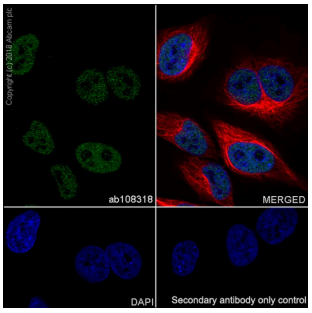
ab108318 (unpurified) staining BRG1 in wild-type HAP1 cells (top panel) and BRG1 knockout HAP1 cells (bottom panel). The cells were fixed with 4% formaldehyde (10min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated with ab108318 at 1/500 dilution and ab195889 at 1/250 dilution (shown in pseudocolour red) overnight at +4°C, followed by a further incubation at room temperature for 1h with a goat secondary antibody to Rabbit IgG (Alexa Fluor® 488) (ab150081) at 2 µg/ml (shown in green). Nuclear DNA was labelled in blue with DAPI. Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).



Flow Cytometry (Intracellular) - Anti-BRG1 antibody [EPR3912] (ab108318)

BRG1 Flow Cytometry (Intracellular) staining using rabbit Anti-BRG1 antibody

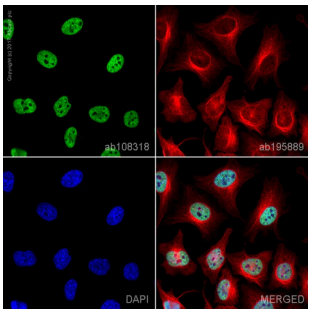
Intracellular Flow Cytometry analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling BRG1 with purified ab108318 at 1/20 dilution (10µg/ml) (red). Cells were fixed with 4% Paraformaldehyde and permeabilised with 90% Methanol. A Goat anti rabbit IgG (Alexa Fluorr® 488, ab150077) secondary antibody was used at 1/2000. Isotype control - Rabbit monoclonal IgG (Black). Unlabeled control - Cell without incubation with primary antibody and secondary antibody (Blue).



Immunocytochemistry/ Immunofluorescence - Anti-BRG1 antibody [EPR3912] (ab108318)

BRG1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-BRG1 antibody

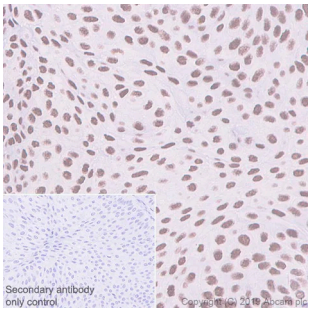
Immunocytochemistry/ Immunofluorescence analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling BRG1 with purified ab108318 at 1/50 dilution (2.3 µg/ml). Cells were fixed in 4% Paraformaldehyde and permeabilized with 0.1% tritonX-100. Cells were counterstained with ab195889 Anti-alpha Tubulin antibody [DM1A] - Microtubule Marker (Alexa Fluor® 594) at 1/200 (2.5 µg/ml). Goat anti rabbit IgG (Alexa Fluor® 488, ab150077) was used as the secondary antibody at 1/1000 (2 µg/ml) dilution. DAPI (blue) was used as nuclear counterstain. PBS instead of the primary antibody was used as the secondary antibody only control.



Immunocytochemistry/ Immunofluorescence - Anti-BRG1 antibody [EPR3912] (ab108318)

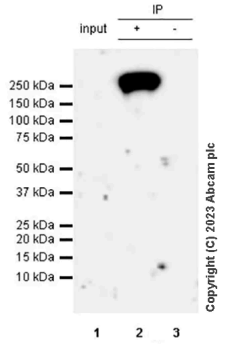
BRG1 Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-BRG1 antibody

ab108318 (unpurified) staining BRG1 in HeLa cells. The cells were fixed with 4% formaldehyde (10min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated with ab108318 at 1/500 dilution and ab195889 at 1/250 dilution (shown in pseudocolour red) overnight at +4°C, followed by a further incubation at room temperature for 1h with a goat secondary antibody to Rabbit IgG (Alexa Fluor® 488) (ab150081) at 2 µg/ml (shown in green). Nuclear DNA was labelled in blue with DAPI.
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-BRG1 antibody [EPR3912] (ab108318)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Human bladder cancer tissue sections labeling BRG1 with purified ab108318 at 1/500 dilution (0.23 µg/ml). Heat mediated antigen retrieval was performed using ab93684 (Tris/EDTA buffer, pH 9.0). ImmunoHistoProbe one step HRP Polymer (ready to use) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



Immunoprecipitation - Anti-BRG1 antibody [EPR3912] (ab108318)

BRG1 was immunoprecipitated from K-562 (human chronic myelogenous leukemia lymphoblast), whole cell lysate with ab108318 at 1/30 dilution (2µg in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab108318 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used as secondary antibody at 1/5000 dilution. Lane 1 (Input): K-562 (human chronic myelogenous leukemia lymphoblast), whole cell lysate, 10 µg Lane 2 (+) : K-562 whole cell lysate Lane 3 (-) : Rabbit monoclonal IgG (ab172730) instead of ab108318 in K-562 whole cell lysate Blocking and diluting buffer and concentration: 5% NFDM/TBST. Observed MW: 185 kDa.
All lanes:
Immunoprecipitation - Anti-BRG1 antibody [EPR3912] (ab108318) at 1/1000 dilution

Lane 1:
K-562 (human chronic myelogenous leukemia lymphoblast), whole cell lysate at 10 µg

Lane 2:

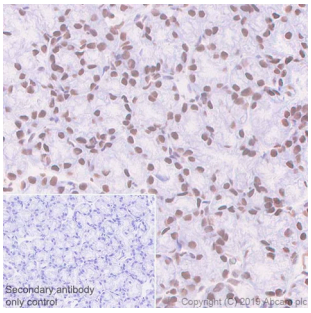
K-562 whole cell lysate

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Predicted band size: 185 kDa

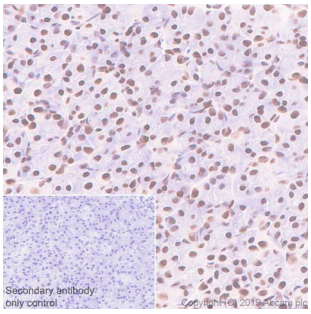
Observed band size: 185 kDa



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-BRG1 antibody [EPR3912] (ab108318)

BRG1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-BRG1 antibody

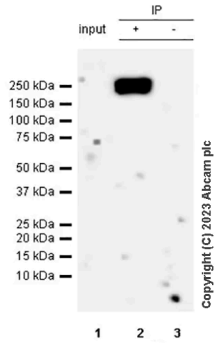
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Mouse stomach tissue sections labeling BRG1 with purified ab108318 at 1/500 dilution (0.23 µg/ml). Heat mediated antigen retrieval was performed using ab93684 (Tris/EDTA buffer, pH 9.0). ImmunoHistoProbe one step HRP Polymer (ready to use) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-BRG1 antibody [EPR3912] (ab108318)

BRG1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-BRG1 antibody

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of Rat stomach tissue sections labeling BRG1 with purified ab108318 at 1/500 dilution (0.23 µg/ml). Heat mediated antigen retrieval was performed using ab93684 (Tris/EDTA buffer, pH 9.0). ImmunoHistoProbe one step HRP Polymer (ready to use) was used as the secondary antibody. Negative control: PBS instead of the primary antibody. Hematoxylin was used as a counterstain.



Immunoprecipitation - Anti-BRG1 antibody [EPR3912] (ab108318)

BRG1 was immunoprecipitated from NIH/3T3 (mouse embryonic fibroblast), whole cell lysate with ab108318 at 1/30 dilution (2µg in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab108318 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP) (ab131366) was used as secondary antibody at 1/5000 dilution. Lane 1 (Input): NIH/3T3 (mouse embryonic fibroblast), whole cell lysate, 10 µg Lane 2 (+) : NIH/3T3 whole cell lysate Lane 3 (-) : Rabbit monoclonal IgG (ab172730) instead of ab108318 in NIH/3T3 whole cell lysate Blocking and diluting buffer and concentration: 5% NFDM/TBST. Observed MW: 185 kDa.
All lanes:
Immunoprecipitation - Anti-BRG1 antibody [EPR3912] (ab108318) at 1/1000 dilution

Lane 1:
NIH/3T3 (mouse embryonic fibroblast), whole cell lysate at 10 µg

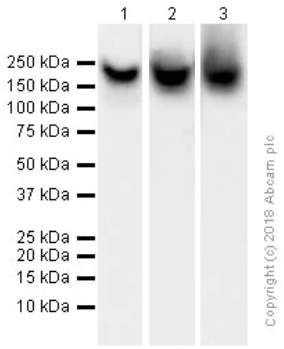
Lane 2:
NIH/3T3 whole cell lysate

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/5000 dilution

Predicted band size: 185 kDa

Observed band size: 185 kDa



Western blot - Anti-BRG1 antibody [EPR3912] (ab108318)

All lanes:
Western blot - Anti-BRG1 antibody [EPR3912] (ab108318) at 1/1000 dilution

Lane 1:
K-562 (Human chronic myelogenous leukemia lymphoblast) whole cell lysates at 20 µg

Lane 2:
NIH/3T3 (Mouse embryonic fibroblast) whole cell lysates at 20 µg

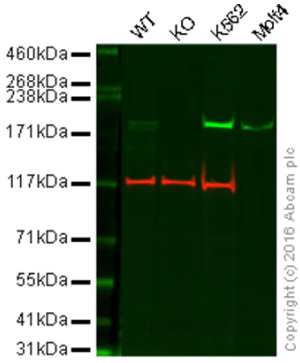
Lane 3:
PC-12 (Rat adrenal gland pheochromocytoma) whole cell lysates at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 185 kDa

Observed band size: 185 kDa



Western blot - Anti-BRG1 antibody [EPR3912] (ab108318)

Lanes 1 - 4: Merged signal (red and green). Red - loading control, ab18058 (unpurified), observed at 124 kDa.
ab108318 was shown to specifically react with BRG1 in wild-type HAP1 cells along with additional cross reactive bands. No band was observed when BRG1 knockout samples were used. Wild-type and BRG1 knockout samples were subjected to SDS-PAGE, ab108318 and ab18058 (loading control to Vinculin) were diluted 1/1000 and 1/10,000 respectively and incubated overnight at 4°C. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) secondary antibodies at 1/10,000 dilution for 1hr at room temperature before imaging.

All lanes:
Western blot - Anti-BRG1 antibody [EPR3912] (ab108318) at 1/1000 dilution

Lane 1:
Wild-type HAP1 cell lysate at 20 µg

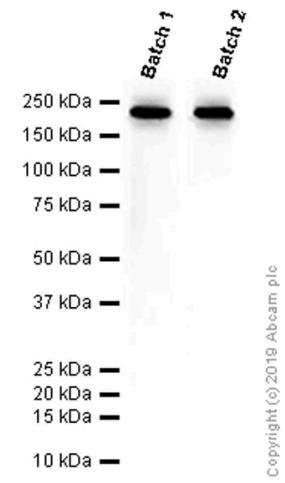
Lane 2:
BRG1 knockout HAP1 cell lysate at 20 µg

Lane 3:
K562 cell lysate at 20 µg

Lane 4:
Molt-4 cell lysate at 20 µg

Predicted band size: 185 kDa

Observed band size: 185 kDa

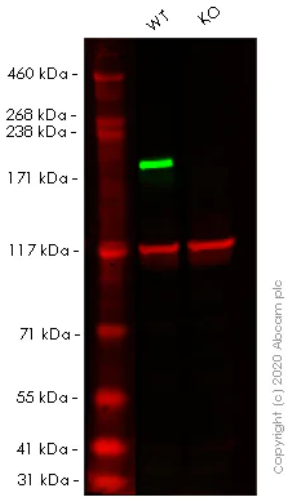


Western blot - Anti-BRG1 antibody [EPR3912] (ab108318)

BRG1 Western blot staining using rabbit Anti-BRG1 antibody

Different batches of ab108318 were tested on K-562 (Human chronic myelogenous leukemia lymphoblast) lysate at 0.05 µg/ml. 15 µg of lysate was loaded in each lane. Bands observed at 185 kDa.
All lanes:
Western blot - Anti-BRG1 antibody [EPR3912] (ab108318)

Predicted band size: 185 kDa



Western blot - Anti-BRG1 antibody [EPR3912] (ab108318)

BRG1 Western blot staining using rabbit Anti-BRG1 antibody

Lanes 1- 2: Merged signal (red and green). Green - ab108318 observed at 185 kDa. Red - Anti-Vinculin antibody [VIN-54] observed at 124 kDa.
ab108318 was shown to react with SMARCA4 in wild-type HEK-293T cells in western blot. Loss of signal was observed when knockout cell line ab255432 (knockout cell lysate ab263853) was used. Wild-type HEK-293T and SMARCA4 knockout HEK-293T cell lysates were subjected to SDS-PAGE. Membrane was blocked for 1 hour at room temperature in 0.1% TBST with 3% non-fat dried milk. ab108318 and Anti-Vinculin antibody [VIN-54] overnight at 4°C at a 1 in 10000 dilution and a 1 in 20000 dilution respectively. Blots were developed with Goat anti-Rabbit IgG H&L (IRDye®800CW) preadsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye®680RD) preadsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 hour at room temperature before imaging.

All lanes:
Western blot - Anti-BRG1 antibody [EPR3912] (ab108318) at 1/10000 dilution

Lane 1:
Wild-type HEK-293T cell lysate at 20 µg

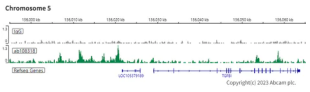
Lane 2:
SMARCA4 knockout HEK-293T cell lysate at 20 µg

Lane 2:
Western blot - Human SMARCA4 (BRG1) knockout HEK-293T cell line (ab255432)

Performed under reducing conditions.

Predicted band size: 185 kDa

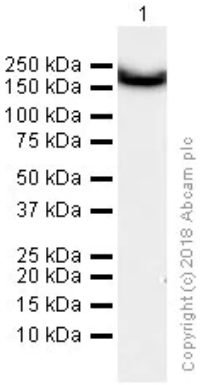
Observed band size: 185 kDa



ChIC/CUT&RUN sequencing - Anti-BRG1 antibody [EPR3912] (ab108318)

ChIC/CUT&RUN was performed using a pAG-MNAse at a final concentration of 700 ng/mL, 2.5 x 10^5 HeLa (Human cervix adenocarcinoma epithelial cell line) cells and 5µg of ab108318

[EPR3912]. The resulting DNA was sequenced on the Illumina NovaSeq 6000 to a depth of 10 million reads. The negative IgG control ab172730 is also shown. Additional screenshots of mapped reads can be found in the Protocol booklet in the Product Protocol section. The University of Geneva owns patents relevant to ChIC (Chromatin Immuno-Cleavage) methods.



Western blot - Anti-BRG1 antibody [EPR3912] (ab108318)

All lanes:
Western blot - Anti-BRG1 antibody [EPR3912] (ab108318) at 1/10000 dilution

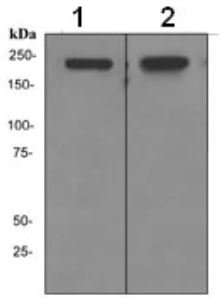
All lanes:
RAW264.7 (Mouse Abelson murine leukemia virus-induced tumor macrophage) whole cell lysates at 20 µg

Secondary

All lanes:
Western blot - Goat Anti-Rabbit IgG H&L (HRP) (ab97051) at 1/20000 dilution

Predicted band size: 185 kDa

Observed band size: 185 kDa



Western blot - Anti-BRG1 antibody [EPR3912] (ab108318)

All lanes:
Western blot - Anti-BRG1 antibody [EPR3912] (ab108318) at 1/1000 dilution

Lane 1:
K562 cell lysate at 10 µg

Lane 2:
Molt-4 cell lysate at 10 µg

Predicted band size: 185 kDa

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.