abcam

ab182560

Anti-ARID1A antibody [EPR13501]

Anti-ARID1A antibody [EPR13501] (ab182560) is a rabbit monoclonal antibody detecting ARID1A in **Western Blot, Flow Cytometry (Intra), IHC-P, ICC/IF**. Suitable for **Human**.

- KO validated for confirmed specificity
- Biophysical QC for unrivalled batch-batch consistency
- Over 30 publications

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

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7.2 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	EPR13501
Purification technique	Affinity purification Protein A
Concentration	2.47 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IHC-P

Tested

Species	Rat
Dilution info	1/2500
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Mouse
Dilution info	1/2500
Notes	Perform heat-mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.

Species	Human
Dilution info	1/1000
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

ChIC/CUT&RUN-seq

Tested

Species	Human
Dilution info	5 µg
Notes	-

Expected

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

WB

Tested

Species	Human
Dilution info	1/1000
Notes	-

Species	Mouse
Dilution info	1/1000
Notes	-

Species	Rat
Dilution info	1/1000
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/500
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	ab172730 - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.

Expected

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

ChIP

Not recommended

Species	Human, Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information ARID1A

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. Binds DNA non-specifically. 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 (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

What is this antibody validated in?
Anti-ARID1A antibody [EPR13501] (ab182560) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Flow Cytometry (Flow Cyt), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human samples.

What is the molecular weight of ARID1A?
Anti-ARID1A [EPR13501] (ab182560) specifically detects a band for ARID1A (UniProt: O14497) at a molecular weight of 242kDa.

Trusted by the scientific community
Anti-ARID1A [EPR13501] (ab182560) was first used in a scientific publication in 2013 and has been cited over 30 times in peer-reviewed journals.

Specificity confirmed
The specificity of Anti-ARID1A antibody [EPR13501] (ab182560) has been confirmed by Immunocytochemistry testing in ARID1A Knockout HAP1 cell line, ab266189.

Other related products
We have a range of other formats of antibody clone [EPR13501] also available for your convenience: ab182560, Alexa Fluor® 488 - ab216112, Alexa Fluor® 647 - ab216304, Carrier free - ab217154

Trial sizes available!
Test your antibody or perform pre-screening before committing to a larger quantity. Sold in 20µl. Discover our selection of trial-size antibodies.

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.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	ARID1A also known as BAF250A is a protein encoded by the ARID1A gene and forms part of the SWI/SNF chromatin remodeling complex. The molecular weight of ARID1A is approximately 270 kDa. This protein is expressed in many tissues but

	higher expression is noted in the liver kidney and placenta. ARID1A contains an ARID (A-T Rich Interaction Domain) which allows it to bind DNA influencing transcription regulation significantly.
Biological function summary	ARID1A impacts cellular functions through its role in the SWI/SNF complex. This complex modulates chromatin structure and is integral to DNA accessibility which in turn controls gene expression. ARID1A's involvement helps in regulating transcription factors and affects processes such as cell growth and differentiation. Its function is necessary for maintaining proper cell proliferation and apoptosis balance.
Pathways	ARID1A plays a central role in transcriptional regulation and cell cycle control. It shows interaction with the tumor suppressor protein p53 and is implicated in the PI3K/AKT signaling pathway. ARID1A's function in these pathways affects cellular responses to DNA damage and growth signals linking it closely to important cellular fate decisions.
Associated diseases and disorders	Mutations or loss of function in ARID1A has been strongly associated with various cancers including ovarian and endometrial cancers. In these contexts ARID1A dysfunction often occurs alongside other proteins such as p53 contributing to tumorigenesis by deregulating tumor suppressive pathways. It also holds a potential connection to neurodevelopmental disorders due to its role in chromatin remodeling and gene expression.

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

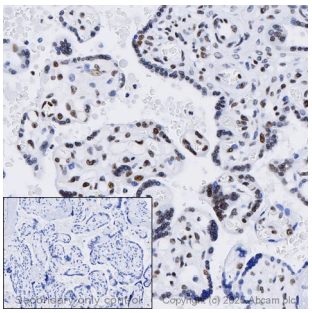
We do not recommend this combination. It is not covered by our product promise.

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:
Terms & Conditions.

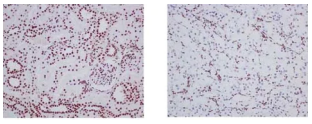
16 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ARID1A antibody [EPR13501] (ab182560)

ARID1A Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human placenta using rabbit Anti-ARID1A antibody

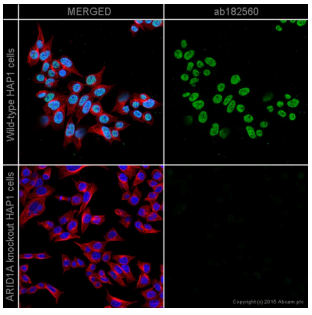
Immunohistochemical analysis of formalin fixed paraffin embedded human placenta labelling ARID1A with ab182560 at a concentration of 1µg/ml. The immunostaining was performed on a Ventana DISCOVERY ULTRA (Roche Tissue Diagnostics) instrument with a OptiView DAB IHC Detection Kit. Heat mediated antigen retrieval was performed with DISCOVERY cell conditioning solution (CC1) 100°C, pH8.5 for 32mins. ab182560 Anti-ARID1A antibody [EPR13501] 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).



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ARID1A antibody [EPR13501] (ab182560)

ARID1A Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-ARID1A antibody

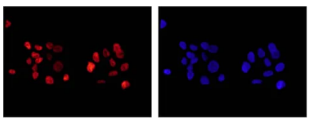
Immunohistochemical analysis of paraffin embedded Human kidney tissue (Left image) labeling ARID1A using ab182560 at 1/1000 dilution. Right image: Right picture: paraffine embedded human clear cell carcinoma of kidney with ARID1A mutation. A Ready to use HRP Polymer for Rabbit IgG (prediluted) was used as secondary. Counterstain: Hematoxylin.
Heat mediated antigen retrieval with Tris-EDTA, pH 9 was performed before commencing with IHC staining protocol.



Immunocytochemistry/ Immunofluorescence - Anti-ARID1A antibody [EPR13501] (ab182560)

ARID1A Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-ARID1A antibody

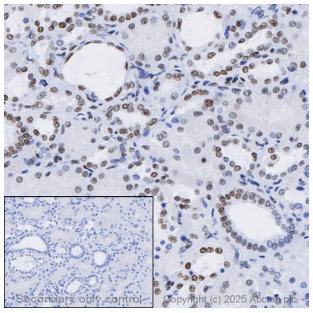
ab182560 staining ARID1A in wild-type HAP1 cells (top panel) and ARID1A knockout HAP1 cells (bottom panel). The cells were fixed with 4% formaldehyde (10min), permeabilized with 0.1% Triton X-100 for 5 minutes and then blocked with 1% BSA/10% normal goat serum/0.3M glycine in 0.1% PBS-Tween for 1h. The cells were then incubated with ab182560 at 1/500 dilution and ab195889 at 1/250 dilution (shown in pseudo colour 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.



Immunocytochemistry/ Immunofluorescence - Anti-ARID1A antibody [EPR13501] (ab182560)

ARID1A Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-ARID1A antibody

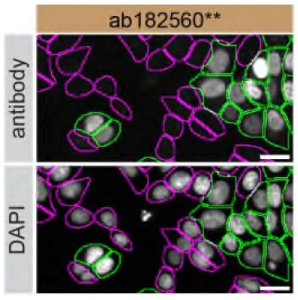
Immunofluorescent analysis of SH-SY5Y cells labeling ARID1A with ab182560 at 1/500 and Goat anti rabbit IgG(Alexa Fluor®555) at 1/200. Image at the right stained with DAPI.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ARID1A antibody [EPR13501] (ab182560)

ARID1A Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Human kidney using rabbit Anti-ARID1A antibody

Immunohistochemical analysis of formalin fixed paraffin embedded human kidney labelling ARID1A with ab182560 at a concentration of 1µg/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. ab182560 Anti-ARID1A antibody [EPR13501] 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).

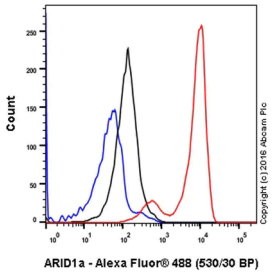


Immunocytochemistry/ Immunofluorescence - Anti-ARID1A antibody [EPR13501] (ab182560)

ARID1A Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-ARID1A antibody

ab182560 was shown to react with ARID1A in wild-type HAP1 cells in immunocytochemistry with loss of signal observed in a ARID1A knockout cell line. Wild-type and knockout cells were mixed and pelleted at a 1:1 ratio on coverslips. The cells were fixed with 4% paraformaldehyde (15 min) then permeabilized with 0.1% Triton X-100 (10min) and then blocked with 1x PBS, 0.01% Triton X-100, 5% BSA, 5% NGS. The cells were then incubated with ab182560 at 1/2000 dilution overnight at 4°C followed by a further incubation at room temperature for 1h with a goat anti-rabbit secondary antibody to (Alexa Fluor® 555) at 0.5 µg/ml. Acquisition of the green (wild-type), red (antibody staining) and far-red (knockout) channels was performed. Representative grayscale images of the red channel are shown. Wild-type and knockout cells are outlined with yellow and magenta dashed line, respectively. Schematic representation of the mosaic strategy used is shown on the bottom-right panel. Image was acquired with a Zeiss(LSM-880).

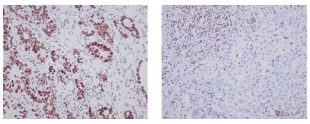
This data was provided by YCharOS Inc., an open science company with the mission of characterizing commercially available antibody reagents for all human proteins. Abcam and YCharOS are working together to help address the reproducibility crisis by enabling the life science community to better evaluate commercially available antibodies.



Flow Cytometry (Intracellular) - Anti-ARID1A antibody [EPR13501] (ab182560)

ARID1A Flow Cytometry (Intracellular) staining using rabbit Anti-ARID1A antibody

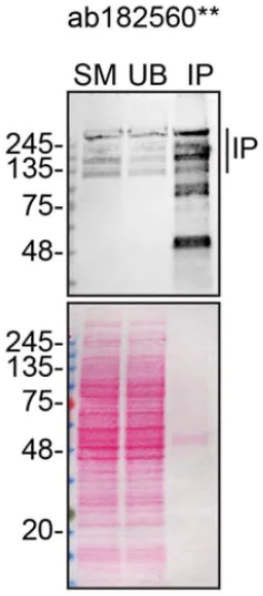
Intracellular Flow Cytometry analysis of SH-SY5Y (human neuroblastoma) cells labeling ARID1A with purified ab182560 at 1/230 dilution (10ug/ml) (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. A Goat anti rabbit IgG (Alexa Fluor® 488) (1/2000 dilution) was used as the secondary antibody. Rabbit monoclonal IgG (Black) was used as the isotype control, cells without incubation with primary antibody and secondary antibody (Blue) were used as the unlabeled control.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ARID1A antibody [EPR13501] (ab182560)

ARID1A Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-ARID1A antibody

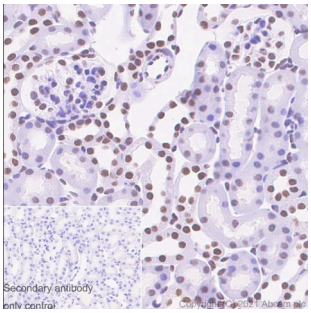
Immunohistochemical analysis of paraffin embedded Human adenocarcinoma of endometrium without ARID1A mutation (Left image) labeling ARID1A using ab182560 at 1/1000 dilution. Right image: Right picture: paraffine embedded human adenocarcinoma of endometrium with ARID1A mutation. A Ready to use HRP Polymer for Rabbit IgG (prediluted) was used as secondary. Counterstain: Hematoxylin.
Heat mediated antigen retrieval with Tris-EDTA, pH 9 was performed before commencing with IHC staining protocol.



Immunoprecipitation - Anti-ARID1A antibody [EPR13501] (ab182560)

Immunoprecipitation of ARID1A in HAP1 cells. Lysates were prepared and immunoprecipitation was performed using 2 µg of ab182560 pre-coupled to Protein A beads. Samples were then washed and processed for western blot.

This data was provided by YCharOS Inc., an open science company with the mission of characterizing commercially available antibody reagents for all human proteins. Abcam and YCharOS are working together to help address the reproducibility crisis by enabling the life science community to better evaluate commercially available antibodies.

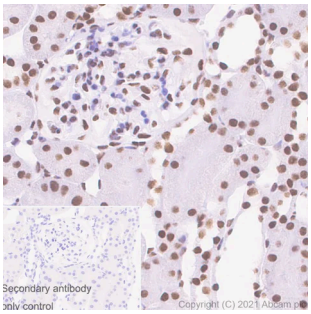


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ARID1A antibody [EPR13501] (ab182560)

ARID1A Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Mouse kidney using rabbit Anti-ARID1A antibody

Immunohistochemical analysis of formalin fixed paraffin embedded mouse kidney labelling ARID1A with ab182560 at a concentration of 1/2500 dilution. The section was incubated with ab182560 for 10 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. A ready to use Rabbit specific IHC polymer detection kit HRP/DAB was used as a secondary. Sections were counterstained with Hematoxylin.

Heat mediated antigen retrieval was performed with Citrate buffer (pH 9.0, Epitope Retrieval Solution 2) for 20 mins.

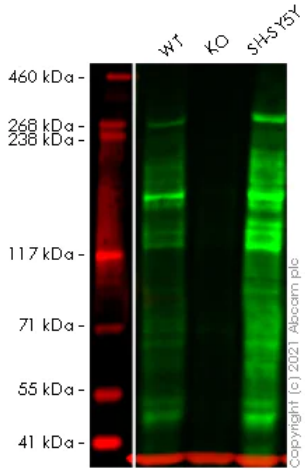


Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ARID1A antibody [EPR13501] (ab182560)

ARID1A Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining of Rat kidney using rabbit Anti-ARID1A antibody

Immunohistochemical analysis of formalin fixed paraffin embedded rat kidney labelling ARID1A with ab182560 at a concentration of 1/2500 dilution. The section was incubated with ab182560 for 10 mins at room temperature. The immunostaining was performed on a Leica Biosystems BOND® RX instrument. A ready to use Rabbit specific IHC polymer detection kit HRP/DAB was used as a secondary. Sections were counterstained with Hematoxylin.

Heat mediated antigen retrieval was performed with Citrate buffer (pH 9.0, Epitope Retrieval Solution 2) for 20 mins.



Western blot - Anti-ARID1A antibody [EPR13501] (ab182560)

ARID1A Western blot staining using rabbit Anti-ARID1A antibody

Lanes 1 - 3: Merged signal (red and green). Green - ab182560 observed at 270 kDa. Red - loading control ab8245 (Mouse anti-GAPDH antibody [6C5]) observed at 37 kDa.
ab182560 was shown to react with ARID1A in wild-type HEK-293T cells in Western blot with loss of signal observed in ARID1A knockout cell line ab266189 (ARID1A knockout cell lysate ab257250). Wild-type HEK-293T and ARID1A knockout cell lysates were subjected to SDS-PAGE. Membranes were blocked in 3 % milk in TBS-T (0.1 % Tween®) before incubation with ab182560 and ab8245 (Mouse anti-GAPDH antibody [6C5]) overnight at 4°C at a 1 in 1000 dilution and a 1 in 20000 dilution respectively. Blots were incubated with Goat anti-Rabbit IgG H&L (IRDye® 800CW) preabsorbed (ab216773) and Goat anti-Mouse IgG H&L (IRDye® 680RD) preabsorbed (ab216776) secondary antibodies at 1 in 20000 dilution for 1 h at room temperature before imaging.

All lanes:
Western blot - Anti-ARID1A antibody [EPR13501] (ab182560) at 1/1000 dilution

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

Lane 2:
Western blot - Human ARID1A knockout HEK-293T cell lysate (ab257250) at 20 µg

Lane 3:
SH-SY5Y cell lysate at 20 µg

Secondary

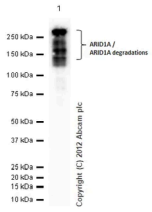
Lanes 1 - 3:
Western blot - Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed (ab216773) at 1/20000 dilution

Lanes 1 - 3:
Western blot - Goat anti-Mouse IgG H&L (IRDye® 680RD) preadsorbed (ab216776) at 1/20000 dilution

Performed under reducing conditions.

Predicted band size: 242 kDa

Observed band size: 270 kDa



Western blot - Anti-ARID1A antibody [EPR13501] (ab182560)

ARID1A Western blot staining of 293T (Human embryonic kidney epithelial cell) whole cell lysate using rabbit Anti-ARID1A antibody

Blocking buffer and concentration: 5% NFDM/TBS
ARID1A has many mutations which typically generate truncated proteins that are highly prone to degradation. (PMID: 21614196, PMID: 29486633, PMID: 34429326).

All lanes:
Western blot - Anti-ARID1A antibody [EPR13501] (ab182560) at 1/1000 dilution

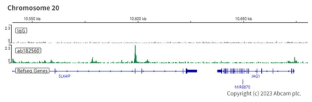
All lanes:
293T (Human embryonic kidney epithelial cell) whole cell lysate at 20 µg

Secondary

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

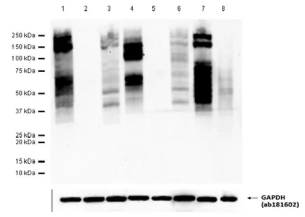
Observed band size: 130-270 kDa

Exposure time: 20s



ChIC/CUT&RUN sequencing - Anti-ARID1A antibody [EPR13501] (ab182560)

ChIC/CUT&RUN was performed using a pAG-MNAse at a final concentration of 700 ng/mL, 2.5 x 10^5 HCT116 cells and 5µg of ab182560 [EPR13501]. 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-ARID1A antibody [EPR13501] (ab182560)

ARID1A Western blot staining using rabbit Anti-ARID1A antibody

Blocking and diluting buffer and concentration: 5% NFDM/TBST.
In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/1000,000 dilution.

This antibody failed to work in kidney tissues from mice and rats. ARID1A has many mutations which typically generate truncated proteins that are highly prone to degradation. (PMID: 21614196, PMID:29486633, PMID: 34429326).

All lanes:
Western blot - Anti-ARID1A antibody [EPR13501] (ab182560) at 1/1000 dilution

Lane 1:
Mouse spleen tissue lysate at 20 µg

Lane 2:
Mouse kidney tissue lysate at 20 µg

Lane 3:
Mouse brain tissue lysate at 20 µg

Lane 4:
Rat spleen tissue lysate at 20 µg

Lane 5:
Rat kidney tissue lysate at 20 µg

Lane 6:
Rat brain tissue lysate at 20 µg

Lane 7:
NIH/3T3 (mouse embryonic fibroblast) whole cell lysate at 20 µg

Lane 8:
C6 (rat glial tumor glial cell) whole cell lysate at 20 µg

Secondary

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

Observed band size: 50-270 kDa, 36 kDa

Exposure time: 180s

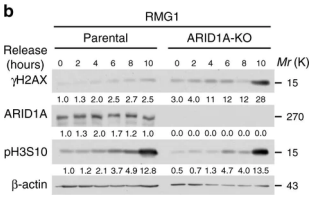


Image collected and cropped by CiteAb under a CC-BY license from the publication

Western blot - Anti-ARID1A antibody [EPR13501] (ab182560)

ARID1A western blot using anti-ARID1A antibody [EPR13501] ab182560. Publication image and figure legend from Zhao, B., Lin, J., et al., 2019, Nat Commun, PubMed 31492885.

ab182560 was used in this publication in western blot. This may not be the same as the application(s) guaranteed by Abcam. For a full list of applications guaranteed by Abcam for ab182560 please see the product overview.

ARID1A inactivation causes DNA damage at telomeres. a, b Schematic of synchronization and release (a) and immunoblot of DNA damage marker γH2AX (b) in parental and ARID1A knockout RMG1 cells. Phosphorylated Histone H3 at serine 10 (pH3S10) was used as a marker of mitosis. Relative intensities of immunoblot bands were quantified underneath. c, d Co-staining of telomere by FISH and γH2AX (c) and quantification of telomeric DNA damage (d) in mitotic parental and ARID1A knockout RMG1 cells after cytospin. e, f Co-staining of telomere by FISH and γH2AX in ARID1A-mutated TOV21G mitotic cells (e) and quantification of mitotic telomeric DNA damage in a panel of clear cell ovarian cancer cell lines or primary cultures highlighted in red (f). g, h Representative images (g) and quantification (h) of telomere DNA damage in parental, P53−/−/Pten−/− and P53−/−/Pten−/−/Arid1a−/− mouse bladder organoid cultures. n = 3 independent experiments unless otherwise stated. Data represent mean ± s.e.m. Scale bar = 10 µm. P values were calculated using a two-tailed t test except in 2f and 2h by multilevel mixed-effects models

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