




Product datasheet

Anti-ATRX antibody [CL0537] ab188027

KO **VALIDATED**

[3 References](#) [8 Images](#)

Overview

Product name	Anti-ATRX antibody [CL0537]
Description	Mouse monoclonal [CL0537] to ATRX
Host species	Mouse
Tested applications	Suitable for: IHC-P, ICC, WB
Species reactivity	Reacts with: Human Predicted to work with: Mouse, Rat 
Immunogen	Recombinant fragment corresponding to Human ATRX aa 2250-2450. Database link: P46100  Run BLAST with  Run BLAST with
Positive control	IHC-P: Human brain glioma, fallopian tube, and testis tissues; WB: A-549 cell lysate. ICC: A431 and HeLa cells.
General notes	<p>The Life Science industry has been in the grips of a reproducibility crisis for a number of years. Abcam is leading the way in addressing this with our range of recombinant monoclonal antibodies and knockout edited cell lines for gold-standard validation. Please check that this product meets your needs before purchasing.</p> <p>If you have any questions, special requirements or concerns, please send us an inquiry and/or contact our Support team ahead of purchase. Recommended alternatives for this product can be found below, along with publications, customer reviews and Q&As</p>

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 long term. Avoid freeze / thaw cycle.
Storage buffer	pH: 7.20 Preservative: 0.02% Sodium azide Constituents: 59% PBS, 40% Glycerol (glycerin, glycerine)
Purity	Protein A purified
Clonality	Monoclonal

Clone number	CL0537
Isotype	IgG1

Applications

The Abpromise guarantee Our **Abpromise guarantee** covers the use of ab188027 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
IHC-P		1/200 - 1/500. Perform heat mediated antigen retrieval with citrate buffer pH 6 before commencing with IHC staining protocol.
ICC		Use a concentration of 2 - 10 µg/ml. Fixation/Permeabilization: PFA/Triton X-100.
WB		Use a concentration of 1 µg/ml. Predicted molecular weight: 282 kDa.

Target

Function

Involved in transcriptional regulation and chromatin remodeling. Facilitates DNA replication in multiple cellular environments and is required for efficient replication of a subset of genomic loci. Binds to DNA tandem repeat sequences in both telomeres and euchromatin and in vitro binds DNA quadruplex structures. May help stabilizing G-rich regions into regular chromatin structures by remodeling G4 DNA and incorporating H3.3-containing nucleosomes. Catalytic component of the chromatin remodeling complex ATRX:DAXX which has ATP-dependent DNA translocase activity and catalyzes the replication-independent deposition of histone H3.3 in pericentric DNA repeats outside S-phase and telomeres, and the in vitro remodeling of H3.3-containing nucleosomes. Its heterochromatin targeting is proposed to involve a combinatorial readout of histone H3 modifications (specifically methylation states of H3K9 and H3K4) and association with CBX5. Involved in maintaining telomere structural integrity in embryonic stem cells which probably implies recruitment of CBX5 to telomeres. Reports on the involvement in transcriptional regulation of telomeric repeat-containing RNA (TERRA) are conflicting; according to a report, it is not sufficient to decrease chromatin condensation at telomeres nor to increase expression of telomeric RNA in fibroblasts (PubMed:24500201). May be involved in telomere maintenance via recombination in ALT (alternative lengthening of telomeres) cell lines. Acts as negative regulator of chromatin incorporation of transcriptionally repressive histone H2AFY, particularly at telomeres and the alpha-globin cluster in erythroleukemic cells. Participates in the allele-specific gene expression at the imprinted IGF2/H19 gene locus. On the maternal allele, required for the chromatin occupancy of SMC1 and CTCF within the H19 imprinting control region (ICR) and involved in establishment of histone tails modifications in the ICR. May be involved in brain development and facial morphogenesis. Binds to zinc-finger coding genes with atypical chromatin signatures and regulates its H3K9me3 levels. Forms a complex with ZNF274, TRIM28 and SETDB1 to facilitate the deposition and maintenance of H3K9me3 at the 3' exons of zinc-finger genes (PubMed:27029610).

Tissue specificity

Ubiquitous.

Involvement in disease

Alpha-thalassemia mental retardation syndrome, X-linked

Mental retardation, X-linked, syndromic, with hypotonic facies 1
Alpha-thalassemia myelodysplasia syndrome

Sequence similarities

Belongs to the SNF2/RAD54 helicase family.
Contains 1 ADD domain.
Contains 1 GATA-type zinc finger.
Contains 1 helicase ATP-binding domain.
Contains 1 helicase C-terminal domain.
Contains 1 PHD-type zinc finger.

Domain

The ADD domain predominantly interacts with histone H3 trimethylated at 'Lys-10'(H3K9me3) (and to a lesser extent H3 mono-or dimethylated at 'Lys-10') and simultaneously to histone H3 unmethylated at 'Lys-5' (H3K4me0). The interaction with H3K9me3 is disrupted by the presence of H3K4me3 suggesting a readout of the combined histone H3 methylation state.
Contains one Pro-Xaa-Val-Xaa-Leu (PxVxL) motif, which is required for interaction with chromoshadow domains. This motif requires additional residues -7, -6, +4 and +5 of the central Val which contact the chromoshadow domain.

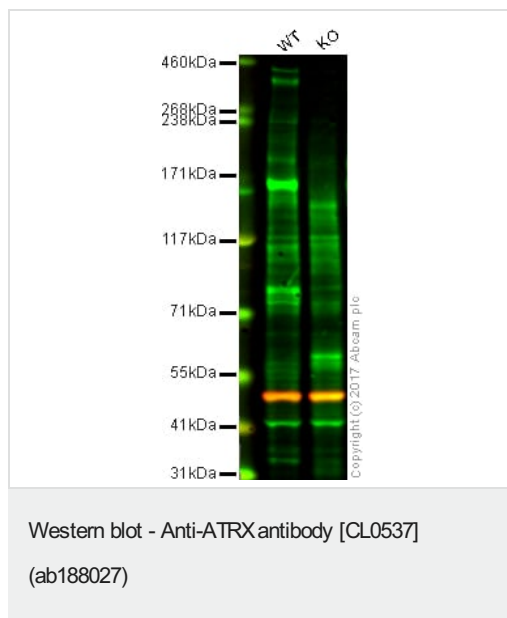
Post-translational modifications

Phosphorylated at serine residues during mitose. Phosphorylation may promote the release from the nuclear matrix and progression to mitosis.

Cellular localization

Nucleus. Chromosome, telomere. Nucleus, PML body. Associated with pericentromeric heterochromatin during interphase and mitosis, probably by interacting with CBX5/HP1 alpha. Colocalizes with histone H3.3, DAXX, HIRA and ASF1A at PML-nuclear bodies. Colocalizes with cohesin (SMC1 and SMC3) and MECP2 at the maternal H19 ICR (By similarity).

Images

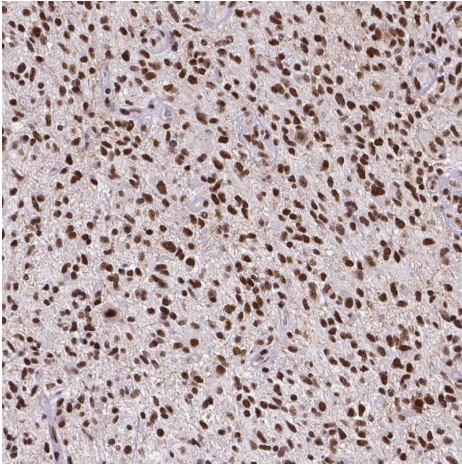


Lane 1: Wild type HAP1 whole cell lysate (20 µg)

Lane 2: ATRX knockout HAP1 whole cell lysate (20 µg)

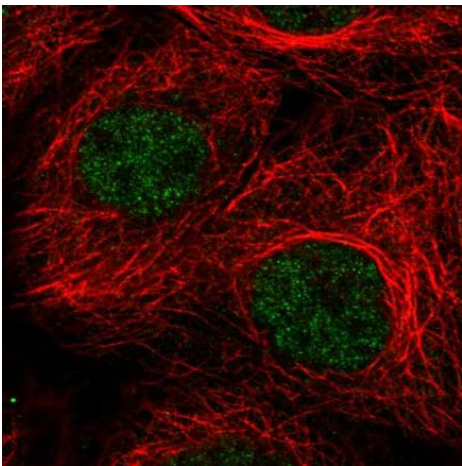
Lanes 1 - 2: Merged signal (red and green). Green - ab188027 observed at 300 kDa. Red - loading control, [ab176560](#), observed at 50 kDa.

ab188027 was shown to recognize ATRX in wild type cells as signal was lost at the expected MW in ATRX knockout cells. Additional cross-reactive bands were observed in the wild-type and knockout cells. Wild-type and ATRX knockout samples were subjected to SDS-PAGE. Ab188027 and [ab176560](#) (Rabbit anti alpha Tubulin loading control) were incubated overnight at 4°C at a 1/500 dilution and 1/20000 dilution respectively. Blots were developed with Goat anti-Mouse IgG H&L (IRDye® 800CW) preabsorbed [ab216772](#) and Goat anti-Rabbit IgG H&L (IRDye® 680RD) preabsorbed [ab216777](#) secondary antibodies at 1/20000 dilution for 1 hour at room temperature before imaging.



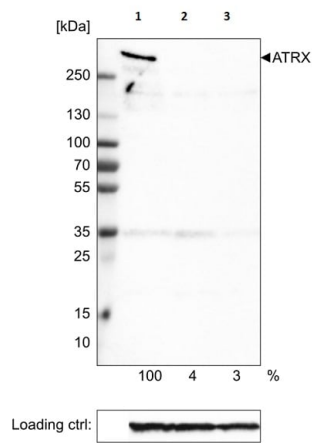
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ATRX antibody [CL0537] (ab188027)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human glioma tissue labelling ATRX with ab188027 at 1/200 dilution. Heat mediated antigen retrieval performed with citrate buffer pH 6 before commencing with IHC staining protocol.



Immunocytochemistry - Anti-ATRX antibody [CL0537] (ab188027)

Immunocytochemistry/Immunofluorescence analysis of A431 cells labelling ATRX with ab188027 showing clear nuclear (without nucleoli) staining in green. Microtubule are visualized in red.



Western blot - Anti-ATR antibody [CL0537]
(ab188027)

All lanes : Anti-ATR antibody [CL0537] (ab188027)

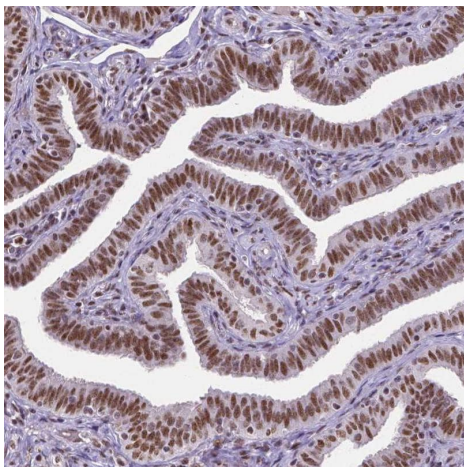
Lane 1 : A-549 cells transfected with control siRNA

Lane 2 : A-549 cells transfected with target specific siRNA probe
#1

Lane 3 : A-549 cells transfected with target specific siRNA probe
#2

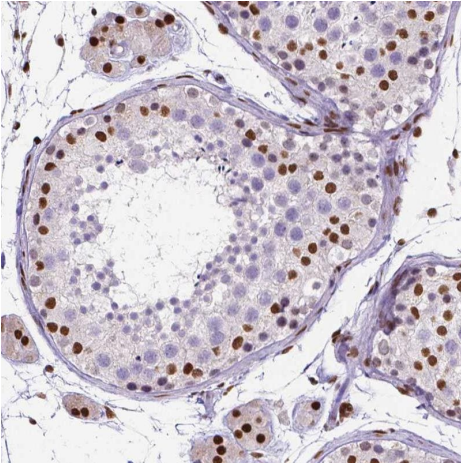
Predicted band size: 282 kDa

Downregulation of antibody signal confirms target specificity.
Remaining % intensity, relative control lane, is indicated. Anti-
GAPDH monoclonal antibody was used as loading control.



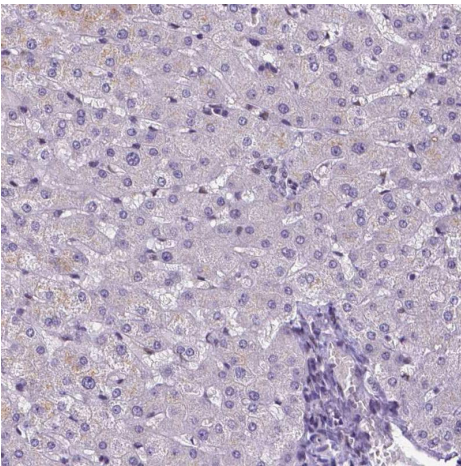
Immunohistochemistry (Formalin/PFA-fixed paraffin-
embedded sections) - Anti-ATR antibody [CL0537]
(ab188027)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded
sections) analysis of human fallopian tube tissue labelling ATRX
with ab188027 at 1/200 dilution. Heat mediated antigen retrieval
performed with citrate buffer pH 6 before commencing with IHC
staining protocol.



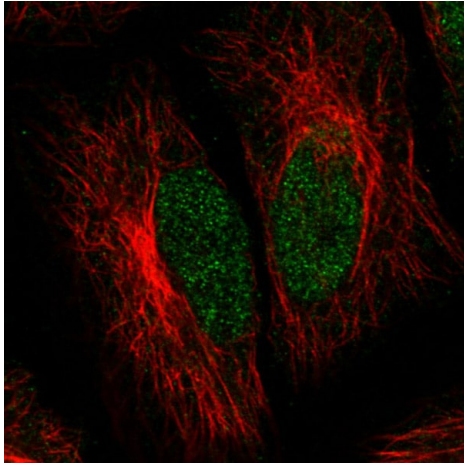
Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ATRX antibody [CL0537] (ab188027)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human testis tissue labelling ATRX with ab188027 at 1/200 dilution. Heat mediated antigen retrieval performed with citrate buffer pH 6 before commencing with IHC staining protocol.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ATRX antibody [CL0537] (ab188027)

Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) analysis of human liver tissue labelling ATRX with ab188027 at 1/200 dilution. Heat mediated antigen retrieval performed with citrate buffer pH 6 before commencing with IHC staining protocol.



Immunocytochemistry - Anti-ATRX antibody
[CL0537] (ab188027)

Immunocytochemistry/Immunofluorescence analysis of HeLa cells labelling ATRX with ab188027 showing clear nuclear (without nucleoli) staining in green. Microtubule are visualized in red.

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