abcam

ab315903

Anti-ZCWCC1 antibody [EPR28655-56]

Recombinant | RabMAb | 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	EPR28655-56
Purification technique	Affinity purification Protein A
Specificity	Unsuitable for mouse and rat IHC.
Concentration	0.503 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	1/500
Notes	-

Expected

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

ICC/IF

Tested

Species	Human
Dilution info	1/50
Notes	-

Species	Mouse
Dilution info	1/50
Notes	-

Expected

Species	Rat
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	-

IP

Tested

Species	Human
Dilution info	1/30
Notes	-

Species	Mouse
Dilution info	1/30
Notes	-

Expected

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

IHC-P

Tested

Species	Human
Dilution info	1/100
Notes	Perform heat-mediated antigen retrieval with Tris/EDTA buffer pH 9.0 before commencing with IHC staining protocol.

Not recommended

Species	Mouse, Rat
Dilution info	-
Notes	-

Target data

See full target information MORC2

Function	ATP-dependent chromatin remodeler essential for epigenetic silencing by the HUSH (human silencing hub) complex (PubMed:28581500, PubMed:29440755, PubMed:32693025). Recruited by HUSH to target site in heterochromatin, the ATPase activity and homodimerization are critical for HUSH-mediated silencing (PubMed:28581500, PubMed:29440755, PubMed:32693025). Represses germ cell-related genes and L1 retrotransposons in collaboration with SETDB1 and the HUSH complex, the silencing is dependent of repressive epigenetic modifications, such as H3K9me3 mark. Silencing events often occur within introns of transcriptionally active genes, and lead to the down-regulation of host gene expression (PubMed:29211708). During DNA damage response, regulates chromatin remodeling through ATP hydrolysis. Upon DNA damage, is phosphorylated by PAK1, both colocalize to chromatin and induce H2AX expression. ATPase activity is required and dependent of phosphorylation by PAK1 and presence of DNA (PubMed:23260667). Recruits histone deacetylases, such as HDAC4, to promoter regions, causing local histone H3 deacetylation and transcriptional repression of genes such as CA9 (PubMed:20110259, PubMed:20225202). Exhibits a cytosolic function in lipogenesis, adipogenic differentiation, and lipid homeostasis by increasing the activity of ACLY, possibly preventing its dephosphorylation (PubMed:24286864). Together with MPHOSPH8, mediates silencing of protocadherin genes in the nervous system (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

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	The protein ZCWCC1 also known as Zinc Finger CW-type Coiled-Coil Domain 1 is a molecular entity with a molecular mass of approximately 85 kDa. ZCWCC1 exists mainly in the nucleus of the cell where it plays a role in the regulation of gene expression. It exhibits a zinc finger motif which allows it to interact with DNA or RNA. Expression of ZCWCC1 is found across various tissue types but it is more prominent in rapidly dividing cells hinting at its involvement in cell cycle regulation.
Biological function summary	ZCWCC1 is implicated in chromatin modification and remodeling affecting how DNA is packed into chromatin. It forms part of a multiprotein complex that facilitates access to specific genetic regions by modifying histones which are proteins around which DNA winds. ZCWCC1 interacting with other proteins in the complex influences transcription and potentially gene silencing. Its function is integral in maintaining the structural configuration of chromatin and ensuring proper gene expression patterns during cellular processes.
Pathways	The activity of ZCWCC1 is integral to the chromatin organization pathway and the gene expression pathway. ZCWCC1 works in conjunction with proteins like histone deacetylases (HDACs) and histone methyltransferases which are vital for modifying histones and regulating gene transcription. These pathways ensure that genetic information is accurately transcribed and translated during various cellular processes including differentiation and proliferation.
Associated diseases and disorders	ZCWCC1 has potential implications in cancer and neurodegenerative diseases. Aberrant expression or mutation of ZCWCC1 can lead to uncontrolled cell proliferation linking it to oncogenic processes in certain cancers. In neurodegenerative disorders dysregulation of chromatin remodeling where ZCWCC1 is involved is observed alongside factors like tau protein suggesting a complex interplay in neurodegeneration. Understanding ZCWCC1's role in these disease contexts may offer insights into novel therapeutic targets or biomarkers.

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.

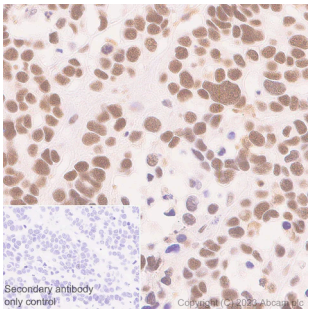
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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.

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12 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ZCWCC1 antibody [EPR28655-56] (ab315903)

Immunohistochemical analysis of paraffin-embedded Human stomach cancer tissue labeling ZCWCC1 with ab315903 at 1/100 (5.03 ug/ml) dilution, followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

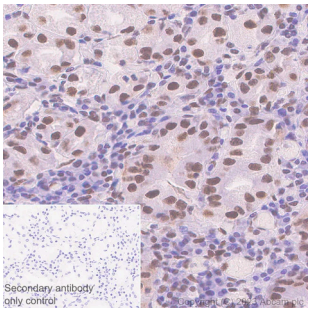
Nuclear staining on human stomach cancer (PMID: 26098774). The section was incubated with ab315903 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins

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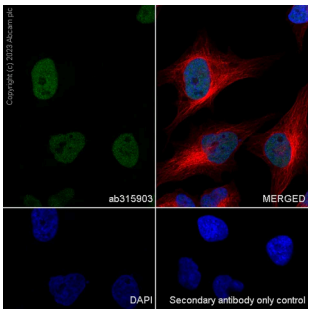
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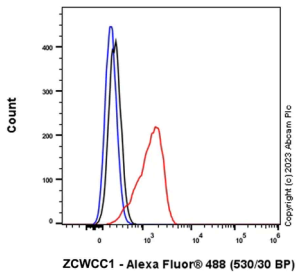
Immunocytochemistry/ Immunofluorescence - Anti-ZCWCC1 antibody [EPR28655-56] (ab315903)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized HeLa (human cervical adenocarcinoma epithelial cell) cells labelling ZCWCC1 with ab315903 at 1/50 (10.06 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 2ug/ml dilution (Green).

Confocal image showing nuclear staining in HeLa cells.
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 2.5ug/ml dilution (Red). The Nuclear counterstain was DAPI (Blue).

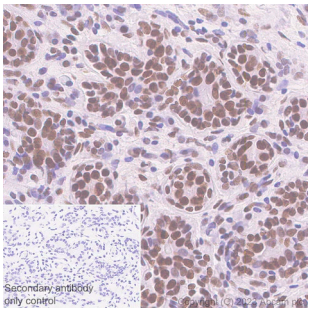
Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2ug/ml dilution.



Flow Cytometry (Intracellular) - Anti-ZCWCC1 antibody [EPR28655-56] (ab315903)

Flow cytometric analysis of 4% paraformaldehyde fixed 90% methanol permeabilized HeLa (human cervical adenocarcinoma epithelial cell) cells labelling ZCWCC1 with ab315903 at 1/500 dilution (0.1 ug)/Red (Red) compared with a Rabbit monoclonal IgG (ab172730) (Black) isotype control and an unlabelled control (cells without incubation with primary antibody and secondary antibody) (Blue).

Goat Anti-Rabbit IgG (Alexa Fluor® 488, ab150081) at 1/5000 dilution was used as the secondary antibody.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-ZCWCC1 antibody [EPR28655-56] (ab315903)

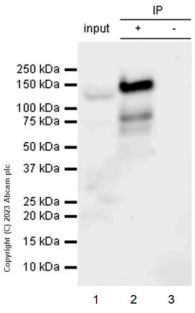
Immunohistochemical analysis of paraffin-embedded Human breast tissue labeling ZCWCC1 with ab315903 at 1/100 (5.03 ug/ml) dilution, followed by a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Nuclear staining on human breast (PMID: 29555576). The section was incubated with ab315903 for 30 mins at room temperature.
The immunostaining was performed on a Leica Biosystems BOND® RX instrument

Counterstained with Hematoxylin.

Secondary antibody only control: Secondary antibody is a ready to use Rabbit specific IHC polymer detection kit HRP/DAB (ab209101).

Heat mediated antigen retrieval was performed with Tris-EDTA buffer (pH 9.0, Epitope Retrieval Solution2) for 20 mins



Immunoprecipitation - Anti-ZCWCC1 antibody [EPR28655-56] (ab315903)

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

ZCWCC1 was immunoprecipitated from 0.35 mg HeLa (human cervical adenocarcinoma epithelial cell) whole cell lysate with ab315903 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab315903 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution.

Lane 1: HeLa (human cervical adenocarcinoma epithelial cell) whole cell lysate
Lane 2: ab315903 IP in HeLa (human cervical adenocarcinoma epithelial cell) whole cell lysate
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab315903 in HeLa whole cell lysate

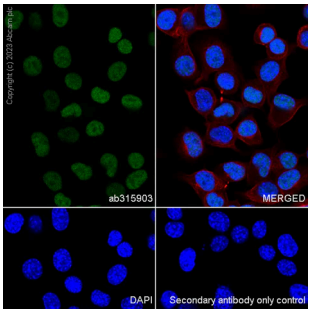
Lysates were freshly made and used for IP immediately to minimize protein degradation.

All lanes:
Immunoprecipitation - Anti-ZCWCC1 antibody [EPR28655-56] (ab315903) at 1/30 dilution

All lanes:
HeLa (human cervical adenocarcinoma epithelial cell) whole cell lysate at 10 µg

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/1000 dilution



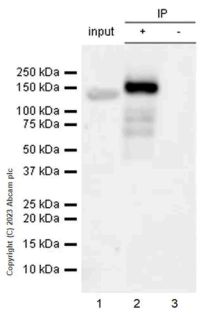
Immunocytochemistry/ Immunofluorescence - Anti-ZCWCC1 antibody [EPR28655-56] (ab315903)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed, 0.1% TritonX-100 permeabilized Neuro-2a (mouse neuroblastoma neuroblast) cells labelling ZCWCC1 with ab315903 at 1/50 (10.06 ug/ml) dilution, followed by ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed antibody at 1/1000 2ug/ml dilution (Green).

Confocal image showing nuclear staining in Neuro-2a cells.
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

ab195889 Anti-alpha Tubulin mouse monoclonal antibody - Microtubule Marker (Alexa Fluor® 594) was used to counterstain tubulin at 1/200 2.5ug/ml dilution (Red). The Nuclear counterstain was DAPI (Blue).

Secondary antibody only control: Secondary antibody is ab150081 Goat Anti-Rabbit IgG H&L (Alexa Fluor® 488) preadsorbed at 1/1000 2ug/ml dilution.



Immunoprecipitation - Anti-ZCWCC1 antibody [EPR28655-56] (ab315903)

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

ZCWCC1 was immunoprecipitated from 0.35 mg Neuro-2a (mouse neuroblastoma neuroblast) whole cell lysate with ab315903 at 1/30 dilution (2ug in 0.35mg lysates). Western blot was performed on the immunoprecipitate using ab315903 at 1/1000 dilution. VeriBlot for IP secondary antibody(HRP)(ab131366) was used at 1/5000 dilution.

Lane 1: Neuro-2a (mouse neuroblastoma neuroblast) whole cell lysate
Lane 2: ab315903 IP in Neuro-2a (mouse neuroblastoma neuroblast) whole cell lysate
Lane 3: Rabbit monoclonal IgG (ab172730) instead of ab315903 in Neuro-2a whole cell lysate

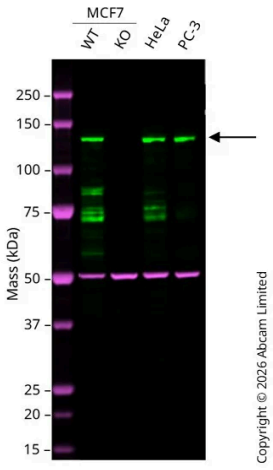
Lysates were freshly made and used for IP immediately to minimize protein degradation.

All lanes:
Immunoprecipitation - Anti-ZCWCC1 antibody [EPR28655-56] (ab315903) at 1/30 dilution

All lanes:
Neuro-2a (mouse neuroblastoma neuroblast) whole cell lysate at 10 µg

Secondary

All lanes:
Immunoprecipitation - VeriBlot for IP Detection Reagent (HRP) (ab131366) at 1/1000 dilution



Western blot - Anti-ZCWCC1 antibody [EPR28655-56] (ab315903)

ZCWCC1 Western blot staining using rabbit Anti-ZCWCC1 antibody

Western blot: Anti-ZCWCC1 antibody [EPR28655-56] ab315903 staining at 1/5000 dilution, shown in green; Mouse anti alpha Tubulin ab7291 loading control staining at 1/20000 dilution, shown in magenta. A band was observed at 140 kDa in Wild-type MCF7 cell lysates with no signal observed at this size in MORC2 knockout MCF7 cell line. To generate this image, samples were run on an SDS-PAGE gel then transferred onto a nitrocellulose membrane. Membranes were blocked in 5% Milk in TBS-0.1 % Tween® 20 (TBS-T) before incubation with primary antibodies overnight at 4 °C. Blots were washed four times in TBS-T, incubated with secondary antibodies for 1 h at room temperature, washed again four times then imaged. Secondary antibodies used were Goat anti-Rabbit 800CW and Goat anti-Mouse 680RD at 1/20,000 dilution.
All lanes:
Western blot - Anti-ZCWCC1 antibody [EPR28655-56] (ab315903) at 1/5000 dilution

Lane 1:
Wild-type MCF7 cell lysates at 20 µg

Lane 2:
MORC2 knockout MCF7 cell lysates at 20 µg

Lane 3:
HeLa cell lysates at 20 µg

Lane 4:
PC-3 cell lysates at 20 µg

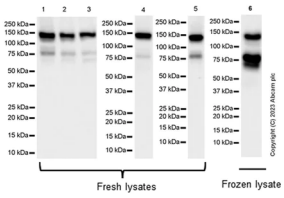
Secondary

All lanes:
Goat anti-Rabbit 800CW & Goat anti-Mouse 680RD at 1/20000 dilution

Performed under reducing conditions.

Predicted band size: 118 kDa

Observed band size: 140 kDa



Western blot - Anti-ZCWCC1 antibody [EPR28655-56] (ab315903)

ZCWCC1 Western blot staining using rabbit Anti-ZCWCC1 antibody

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

The bands beneath the target band around 65-85kDa are likely to be degraded target fragments.

Lysates were freshly made and used for Western blotting immediately to minimize protein degradation.

Exposure time: Lanes 1-5: 10 seconds; Lane 6: 37 seconds.

All lanes:
Western blot - Anti-ZCWCC1 antibody [EPR28655-56] (ab315903) at 1/1000 dilution

Lane 1:
293T (human embryonic kidney epithelial cell) whole cell lysate at 20 µg

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

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

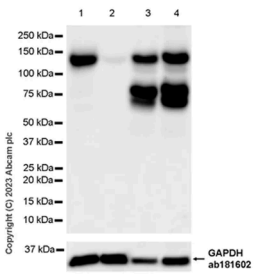
Lane 4:
Neuro-2a (mouse neuroblastoma neuroblast) whole cell lysate at 20 µg

Lanes 5 - 6:
T-47D (human ductal breast epithelial tumor 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: 135 kDa



Western blot - Anti-ZCWCC1 antibody [EPR28655-56] (ab315903)

ZCWCC1 Western blot staining using rabbit Anti-ZCWCC1 antibody

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

The bands beneath the target band around 65-85kDa are likely to be degraded target fragments.

In Western blot, Anti-GAPDH antibody [EPR16891] - Loading Control (ab181602) staining at 1/200000 dilution.

All lanes:
Western blot - Anti-ZCWCC1 antibody [EPR28655-56] (ab315903) at 1/1000 dilution

Lane 1:

HeLa (human cervical adenocarcinoma epithelial cell) transfected with scrambled siRNA control whole cell lysate at 20 µg

Lane 2:
HeLa transfected with siRNA specifically targeting ZCWCC1 whole cell lysate at 20 µg

Lane 3:
T-47D (human ductal breast epithelial tumor epithelial cell) whole cell lysate at 20 µg

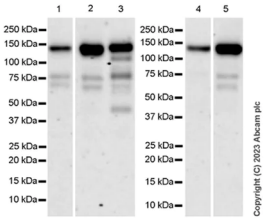
Lane 4:
MCF7 (human breast adenocarcinoma epithelial cell) whole cell lysate at 20 µg

Secondary

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

Observed band size: 135 kDa, 36 kDa

Exposure time: 37s



Western blot - Anti-ZCWCC1 antibody [EPR28655-56] (ab315903)

ZCWCC1 Western blot staining using rabbit Anti-ZCWCC1 antibody

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

The bands beneath the target band are likely to be degraded target fragments.

Lysates were freshly made and used for Western blotting immediately to minimize protein degradation.

All lanes:
Western blot - Anti-ZCWCC1 antibody [EPR28655-56] (ab315903) at 1/1000 dilution

Lane 1:
Rat brain tissue lysate at 20 µg

Lane 2:
Rat testis tissue lysate at 20 µg

Lane 3:
Rat spleen tissue lysate at 20 µg

Lane 4:
Mouse brain tissue lysate at 20 µg

Lane 5:
Mouse testis tissue lysate at 20 µg

Secondary

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

Observed band size: 135 kDa

Exposure time: 180s

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