abcam

ab134064

Anti-STUB1/CHIP antibody [EPR4447]

Anti-STUB1/CHIP antibody [EPR4447] (ab134064) is a rabbit monoclonal antibody detecting STUB1/CHIP in **Western Blot, Flow Cytometry (Intra), IP, IHC-P, ICC/IF**. Suitable for **Human, Mouse, Rat**.

- Biophysical QC for unrivalled batch-batch consistency
- Over 20 publications

Recombinant | RabMAb | 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	EPR4447
Purification technique	Affinity purification Protein A
Concentration	1.273 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

IP

Tested

Species	Human

Dilution info	1/120
Notes	**For unpurified, use 1/10 - 1/100.**

Expected

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

WB

Tested

Species	Mouse
Dilution info	1/10000 - 1/50000
Notes	-

Species	Rat
Dilution info	1/10000 - 1/50000
Notes	-

Species	Human
Dilution info	1/10000 - 1/50000
Notes	-

IHC-P

Tested

Species	Human
Dilution info	1/100
Notes	-

Expected

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

Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1/250 - 1/500
Notes	-

Expected

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

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	-
Notes	-

Expected

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

Target data

See full target information STUB1

Function	E3 ubiquitin-protein ligase which targets misfolded chaperone substrates towards proteasomal degradation (PubMed:10330192, PubMed:11146632, PubMed:11557750, PubMed:23990462, PubMed:26265139). Plays a role in the maintenance of mitochondrial morphology and promotes mitophagic removal of

dysfunctional mitochondria; thereby acts as a protector against apoptosis in response to cellular stress (By similarity). Negatively regulates vascular smooth muscle contraction, via degradation of the transcriptional activator MYOCD and subsequent loss of transcription of genes involved in vascular smooth muscle contraction (By similarity). Promotes survival and proliferation of cardiac smooth muscle cells via ubiquitination and degradation of FOXO1, resulting in subsequent repression of FOXO1-mediated transcription of pro-apoptotic genes (PubMed:19483080). Ubiquitinates ICER-type isoforms of CREM and targets them for proteasomal degradation, thereby acts as a positive effector of MAPK/ERK-mediated inhibition of apoptosis in cardiomyocytes (PubMed:20724525). Inhibits lipopolysaccharide-induced apoptosis and hypertrophy in cardiomyocytes, via ubiquitination and subsequent proteasomal degradation of NFATC3 (PubMed:30980393). Collaborates with ATXN3 in the degradation of misfolded chaperone substrates: ATXN3 restricting the length of ubiquitin chain attached to STUB1/CHIP substrates and preventing further chain extension (PubMed:10330192, PubMed:11146632, PubMed:11557750, PubMed:23990462). Ubiquitinates NOS1 in concert with Hsp70 and Hsp40 (PubMed:15466472). Modulates the activity of several chaperone complexes, including Hsp70, Hsc70 and Hsp90 (PubMed:10330192, PubMed:11146632, PubMed:15466472). Ubiquitinates CHRNA3 targeting it for endoplasmic reticulum-associated degradation in cortical neurons, as part of the STUB1-VCP-UBXN2A complex (PubMed:26265139). Ubiquitinates and promotes ESR1 proteasomal degradation in response to age-related circulating estradiol (17-beta-estradiol/E2) decline, thereby promotes neuronal apoptosis in response to ischemic reperfusion injury (By similarity). Mediates transfer of non-canonical short ubiquitin chains to HSPA8 that have no effect on HSPA8 degradation (PubMed:11557750, PubMed:23990462). Mediates polyubiquitination of DNA polymerase beta (POLB) at 'Lys-41', 'Lys-61' and 'Lys-81', thereby playing a role in base-excision repair: catalyzes polyubiquitination by amplifying the HUWE1/ARF-BP1-dependent monoubiquitination and leading to POLB-degradation by the proteasome (PubMed:19713937). Mediates polyubiquitination of CYP3A4 (PubMed:19103148). Ubiquitinates EPHA2 and may regulate the receptor stability and activity through proteasomal degradation (PubMed:19567782). Acts as a co-chaperone for HSPA1A and HSPA1B chaperone proteins and promotes ubiquitin-mediated protein degradation (PubMed:27708256). Negatively regulates the suppressive function of regulatory T-cells (Treg) during inflammation by mediating the ubiquitination and degradation of FOXP3 in a HSPA1A/B-dependent manner (PubMed:23973223). Catalyzes monoubiquitination of SIRT6, preventing its degradation by the proteasome (PubMed:24043303). Likely mediates polyubiquitination and down-regulates plasma membrane expression of PD-L1/CD274, an immune inhibitory ligand critical for immune tolerance to self and antitumor immunity (PubMed:28813410). Negatively regulates TGF-beta signaling by modulating the basal level of SMAD3 via ubiquitin-mediated degradation (PubMed:24613385). Plays a role in the degradation of TP53 (PubMed:26634371). Mediates ubiquitination of RIPK3 leading to its subsequent proteasome-dependent degradation (PubMed:29883609). May regulate myosin assembly in striated muscles together with UBE4B and VCP/p97 by targeting myosin chaperone UNC45B for proteasomal degradation (PubMed:17369820). Ubiquitinates PPARG in macrophages playing a role in M2 macrophages polarization and angiogenesis (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	Stable for 12 months at -20°C

Notes

What is this antibody validated in?
Anti-STUB1/CHIP antibody [EPR4447] (ab134064) is a rabbit recombinant monoclonal antibody and is validated for use in Western Blot (WB), Flow Cytometry (Intra), Immunoprecipitation (IP), Immunohistochemistry (IHC-P), Immunocytochemistry/immunofluorescence (ICC/IF) in Human, Mouse, Rat samples.

What is the molecular weight of STUB1/CHIP?
Anti-STUB1/CHIP [EPR4447] (ab134064) specifically detects a band for STUB1/CHIP (UniProt: Q9UNE7) at a molecular weight of 35kDa.

Trusted by the scientific community
Anti-STUB1/CHIP [EPR4447] (ab134064) was first used in a scientific publication in 2012 and has been cited over 20 times in peer-reviewed journals.

Reviewed by scientists
Anti-STUB1/CHIP [EPR4447] (ab134064) has over 5 independent reviews from customers.

Other related products
We have a range of other formats of antibody clone [EPR4447] also available for your convenience: ab134064, Carrier free - ab238966, PE - ab303131, APC - ab303132, HRP - ab303133, Alkaline Phosphatase - ab308734, Alexa Fluor® 488 - ab309692, Alexa Fluor® 647 - ab310058, Alexa Fluor® 594 - ab310450, Alexa Fluor® 555 - ab311978, Alexa Fluor® 568 - ab312452, Alexa Fluor® 750 - ab321071

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.

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.

Supplementary info

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

Activity summary	STUB1 also known as CHIP (C-Terminal of Hsc70 Interacting Protein) is a protein with a molecular mass of approximately 35 kDa. It has ubiquitin ligase activity and functions as a co-chaperone. STUB1 interacts with chaperone proteins such as Hsp70 and Hsp90 modulating their activity. You can observe STUB1 expression in various tissues with higher levels found in the brain heart and skeletal muscle.
Biological function summary	STUB1 plays an important role in protein quality control by targeting misfolded or damaged proteins for degradation. It forms a complex with chaperone proteins Hsp70 and Hsp90 facilitating the ubiquitination process. This helps maintain cellular proteostasis. STUB1 has a critical role in preventing protein aggregation which is important in stress responses and normal cellular function.
Pathways	STUB1 has significant involvement in the protein degradation pathway and the heat shock response pathway. It works closely with proteasome-associated proteins to ensure proteostasis. In these pathways STUB1 interacts with other proteins such as Hsc70 and Hsp70 which assist in protein folding and stability under stress conditions.
Associated diseases and disorders	STUB1 has links to neurodegenerative diseases and cancer. A dysfunction in STUB1 can lead to protein aggregation a hallmark of neurodegenerative conditions like Alzheimer's disease. In certain cancers altered STUB1 expression might affect cell survival pathways with related proteins including Hsp70 and Hsp90. Therapeutic strategies that modulate STUB1 and its interactions may provide avenues for disease intervention.

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.

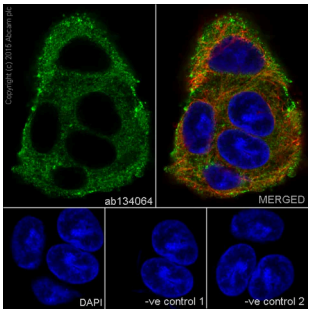
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

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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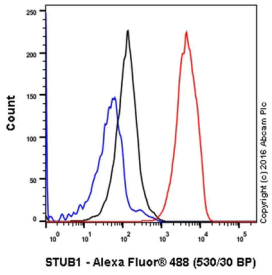
9 product images



Immunocytochemistry/ Immunofluorescence - Anti-STUB1/CHIP antibody [EPR4447] (ab134064)

STUB1/CHIP Immunocytochemistry/ Immunofluorescence staining using rabbit Anti-STUB1/CHIP antibody

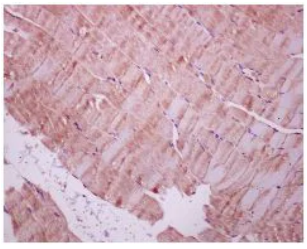
Immunofluorescence staining of SH-SY5Y cells with purified ab134064 at a working dilution of 1/250, counter-stained with DAPI. The secondary antibody was Alexa Fluor® 488 goat anti-rabbit (ab150077), used at a dilution of 1/1000. ab7291, a mouse anti-tubulin antibody (1/1000), was used to stain tubulin along with ab150120 (Alexa Fluor® 594 goat anti-mouse, 1/1000), shown in the top right hand panel. The cells were fixed in 100% methanol and permeabilized using 0.1% Triton X 100. The negative controls are shown in bottom middle and right hand panels - for negative control 1, purified ab134064 was used at a dilution of 1/500 followed by an Alexa Fluor® 594 goat anti-mouse antibody (ab150120) at a dilution of 1/500. For negative control 2, ab7291 (mouse anti-tubulin) was used at a dilution of 1/500 followed by an Alexa Fluor® 488 goat anti-rabbit antibody (ab150077) at a dilution of 1/400.



Flow Cytometry (Intracellular) - Anti-STUB1/CHIP antibody [EPR4447] (ab134064)

STUB1/CHIP Flow Cytometry (Intracellular) staining using rabbit Anti-STUB1/CHIP antibody

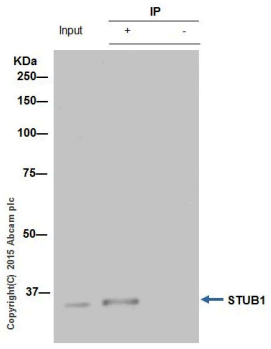
Intracellular Flow Cytometry analysis of SH-SY5Y (Human epithelial cell line from embryonic kidney) cells labeling STUB1/CHIP with purified ab134064 at 1/120 dilution (10ug/ml) (red). Cells were fixed with 4% paraformaldehyde and permeabilised with 90% methanol. A Goat anti rabbit IgG (Alexa Fluor® 488) (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-STUB1/CHIP antibody [EPR4447] (ab134064)

STUB1/CHIP Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using rabbit Anti-STUB1/CHIP antibody

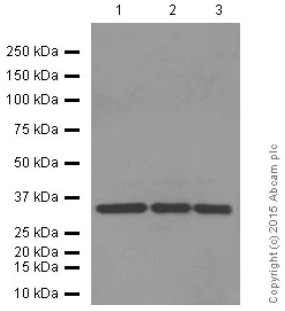
Immunohistochemical analysis of paraffin-embedded Human skeletal muscle tissue labelling STUB1/CHIP with unpurified ab134064 at 1/100 dilution.



Immunoprecipitation - Anti-STUB1/CHIP antibody [EPR4447] (ab134064)

ab134064 (purified) at 1/120 immunoprecipitating STUB1/CHIP in 10 µg HeLa (Lanes 1 and 2, observed at 35 kDa). Lane 3 - PBS. For western blotting, a HRP-conjugated anti-rabbit IgG, specific to the non-reduced form of IgG was used as the secondary antibody (1/1500). Blocking buffer and concentration: 5% NFDM/TBST Dilution buffer and concentration: 5% NFDM/TBST
All lanes:
Immunoprecipitation - Anti-STUB1/CHIP antibody [EPR4447] (ab134064)

Predicted band size: 35 kDa



Western blot - Anti-STUB1/CHIP antibody [EPR4447] (ab134064)

STUB1/CHIP Western blot staining using rabbit Anti-STUB1/CHIP antibody

Blocking buffer: 5% NFDM/TBST
Dilution buffer: 5% NFDM/TBST

All lanes:
Western blot - Anti-STUB1/CHIP antibody [EPR4447] (ab134064) at 1/20000 dilution

Lane 1:
HeLa (Human epithelial cell line from cervix adenocarcinoma) cell lysate at 20 µg

Lane 2:
MCF7 (Human breast adenocarcinoma cell line) cell lysate at 20 µg

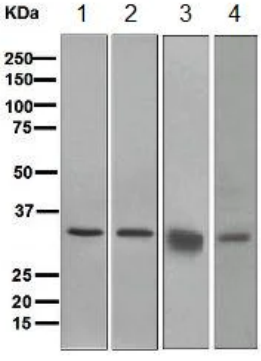
Lane 3:
HEK293 (Human epithelial cell line from embryonic kidney) cell lysate at 20 µg

Secondary

All lanes:
HRP goat anti-rabbit IgG (H+L) at 1/1000 dilution

Predicted band size: 35 kDa

Observed band size: 35 kDa



Western blot - Anti-STUB1/CHIP antibody [EPR4447] (ab134064)

STUB1/CHIP Western blot staining using rabbit Anti-STUB1/CHIP antibody

ECV-304 (derived from T24, discontinued by ATCC)
All lanes:
Western blot - Anti-STUB1/CHIP antibody [EPR4447] (ab134064) at 1/10000 dilution

Lane 1:
HeLa (Human epithelial cell line from cervix adenocarcinoma) cell lysate at 10 µg

Lane 2:
MCF-7 (Human breast adenocarcinoma cell line) cell lysate at 10 µg

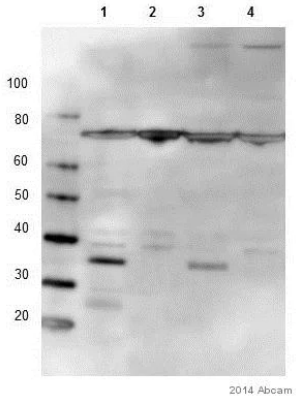
Lane 3:
293T cell lysate at 10 µg

Lane 4:
ECV-304 (Human urinary bladder cancer cell line) cell lysate at 10 µg

Secondary

All lanes:
HRP labelled goat anti-rabbit at 1/2000 dilution

Predicted band size: 35 kDa



This image is courtesy of an anonymous customer review

Western blot - Anti-STUB1/CHIP antibody [EPR4447] (ab134064)

All lanes:
Western blot - Anti-STUB1/CHIP antibody [EPR4447] (ab134064) at 1/1000 dilution

Lane 1:
Wild type primary Mouse neurons whole cell lysate at 20 µg

Lane 2:
STUB1 knockout primary Mouse neurons whole cell lysate at 20 µg

Lane 3:
Wild type MEF (Mouse embryonic fibroblast cell line) whole cell lysate at 20 µg

Lane 4:
STUB1 knockout MEF (Mouse embryonic fibroblast cell line) whole cell lysate at 20 µg

Secondary

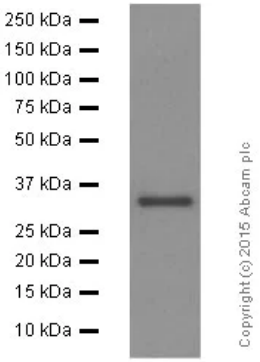
All lanes:
HRP-conjugated goat anti-rabbit IgG polyclonal at 1/20000 dilution

Developed using the ECL technique.

Performed under reducing conditions.

Predicted band size: 35 kDa

Exposure time: 25s



Western blot - Anti-STUB1/CHIP antibody [EPR4447] (ab134064)

Blocking buffer: 5% NFDM/TBST
Dilution buffer: 5% NFDM/TBST

All lanes:
Western blot - Anti-STUB1/CHIP antibody [EPR4447] (ab134064) at 1/50000 dilution

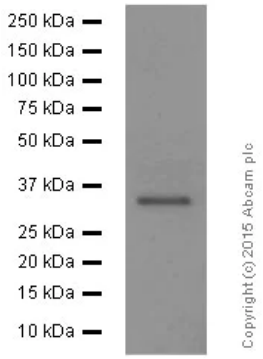
All lanes:
Rat brain at 10 µg

Secondary

All lanes:
HRP goat anti-rabbit IgG (H+L) at 1/50000 dilution

Predicted band size: 35 kDa

Observed band size: 35 kDa



Western blot - Anti-STUB1/CHIP antibody [EPR4447] (ab134064)

STUB1/CHIP Western blot staining of Mouse brain using rabbit Anti-STUB1/CHIP antibody

Blocking buffer: 5% NFDM/TBST
Dilution buffer: 5% NFDM/TBST

All lanes:
Western blot - Anti-STUB1/CHIP antibody [EPR4447] (ab134064) at 1/10000 dilution

All lanes:
Mouse brain at 10 µg

Secondary

All lanes:
HRP goat anti-rabbit IgG (H+L) at 1/50000 dilution

Predicted band size: 35 kDa

Observed band size: 35 kDa

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