

## Product datasheet

# Anti-SQSTM1 / p62 antibody [EPR4844] - BSA and Azide free ab219581

KO VALIDATED

Recombinant

RabMAb

[5 References](#) [14 Images](#)

### Overview

<b>Product name</b>	Anti-SQSTM1 / p62 antibody [EPR4844] - BSA and Azide free
<b>Description</b>	Rabbit monoclonal [EPR4844] to SQSTM1 / p62 - BSA and Azide free
<b>Host species</b>	Rabbit
<b>Specificity</b>	This antibody got too weak band in rat tissues, you may need to optimize experimental protocols (increasing lysate amount, using lower dilution or higher sensitivity ECL substrate) to get visible band. However, it performs very well in rat cell lines.
<b>Tested applications</b>	<b>Suitable for:</b> IP, ICC/IF, Flow Cyt (Intra), WB
<b>Species reactivity</b>	<b>Reacts with:</b> Mouse, Rat, Human
<b>Immunogen</b>	Synthetic peptide. This information is proprietary to Abcam and/or its suppliers.
<b>Positive control</b>	WB: U-2 OS, HCT116, HepG2, MCF-7, Hap1, HeLa, SKBR-3 and 293T cell lysates; Mouse and rat brain, heart and lung lysates. ICC/IF: HeLa cells (untreated and treated with chloroquine), HAP1 cells (HAP1-SQSTM1 knockout cells used as negative cell line) Flow Cyt (intra): HeLa cells.
<b>General notes</b>	<p>ab219581 is the carrier-free version of <a href="#">ab109012</a>.</p> <p>Our <b>carrier-free</b> antibodies are typically supplied in a PBS-only formulation, purified and free of BSA, sodium azide and glycerol. The carrier-free buffer and high concentration allow for increased conjugation efficiency.</p> <p>This conjugation-ready format is designed for use with fluorochromes, metal isotopes, oligonucleotides, and enzymes, which makes them ideal for antibody labelling, functional and cell-based assays, flow-based assays (e.g. mass cytometry) and Multiplex Imaging applications.</p> <p>Use our <a href="#">conjugation kits</a> for antibody conjugates that are ready-to-use in as little as 20 minutes with &lt;1 minute hands-on-time and 100% antibody recovery: available for fluorescent dyes, HRP, biotin and gold.</p> <p>This product is compatible with the Maxpar<sup>®</sup> Antibody Labeling Kit from Fluidigm, without the need for antibody preparation. Maxpar<sup>®</sup> is a trademark of Fluidigm Canada Inc.</p> <p>This product is a recombinant monoclonal antibody, which offers several advantages including:</p> <ul style="list-style-type: none"> <li>- High batch-to-batch consistency and reproducibility</li> <li>- Improved sensitivity and specificity</li> </ul>

- Long-term security of supply
  - Animal-free production
- For more information [see here](#).

Our RabMAb<sup>®</sup> technology is a patented hybridoma-based technology for making rabbit monoclonal antibodies. For details on our patents, please refer to [RabMAb<sup>®</sup> patents](#).

## Properties

<b>Form</b>	Liquid
<b>Storage instructions</b>	Shipped at 4°C. Store at +4°C. Do Not Freeze.
<b>Storage buffer</b>	pH: 7.2 Constituent: PBS
<b>Carrier free</b>	Yes
<b>Purity</b>	Protein A purified
<b>Clonality</b>	Monoclonal
<b>Clone number</b>	EPR4844
<b>Isotype</b>	IgG

## Applications

**The Abpromise guarantee** Our **Abpromise guarantee** covers the use of ab219581 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
<b>IP</b>		Use at an assay dependent concentration.
<b>ICC/IF</b>		Use at an assay dependent concentration.
<b>Flow Cyt (Intra)</b>		Use at an assay dependent concentration. <b>ab199376</b> - Rabbit monoclonal IgG, is suitable for use as an isotype control with this antibody.
<b>WB</b>		Use at an assay dependent concentration. Detects a band of approximately 62 kDa.

## Target

<b>Function</b>	Adapter protein which binds ubiquitin and may regulate the activation of NFκB1 by TNF-α, nerve growth factor (NGF) and interleukin-1. May play a role in titin/TTN downstream signaling in muscle cells. May regulate signaling cascades through ubiquitination. Adapter that mediates the interaction between TRAF6 and CYLD (By similarity). May be involved in cell differentiation, apoptosis, immune response and regulation of K(+) channels.
<b>Tissue specificity</b>	Ubiquitously expressed.
<b>Involvement in disease</b>	Defects in SQSTM1 are a cause of Paget disease of bone (PDB) [MIM:602080]. PDB is a

metabolic bone disease affecting the axial skeleton and characterized by focal areas of increased and disorganized bone turn-over due to activated osteoclasts. Manifestations of the disease include bone pain, deformity, pathological fractures, deafness, neurological complications and increased risk of osteosarcoma. PDB is a chronic disease affecting 2 to 3% of the population above the age of 40 years.

## Sequence similarities

Contains 1 OPR domain.  
Contains 1 UBA domain.  
Contains 1 ZZ-type zinc finger.

## Domain

The UBA domain binds specifically 'Lys-63'-linked polyubiquitin chains of polyubiquitinated substrates. Mediates the interaction with TRIM55.  
The OPR domain mediates homooligomerization and interactions with PRKCZ, PRKCI, MAP2K5 and NBR1.  
The ZZ-type zinc finger mediates the interaction with RIPK1.

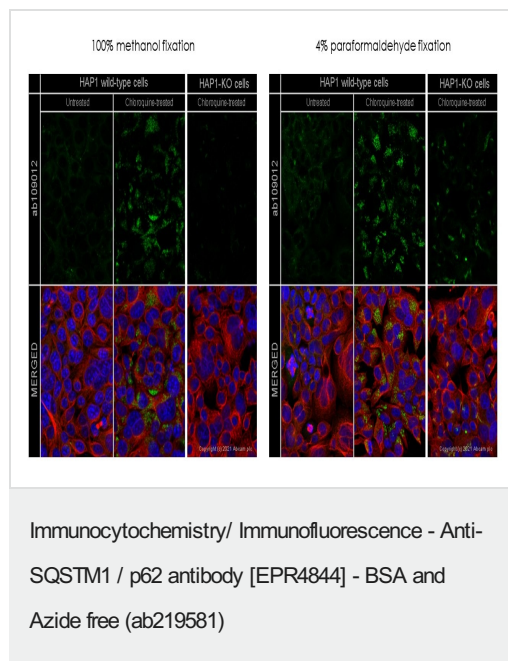
## Post-translational modifications

Phosphorylated. May be phosphorylated by PRKCZ (By similarity). Phosphorylated in vitro by TTN.

## Cellular localization

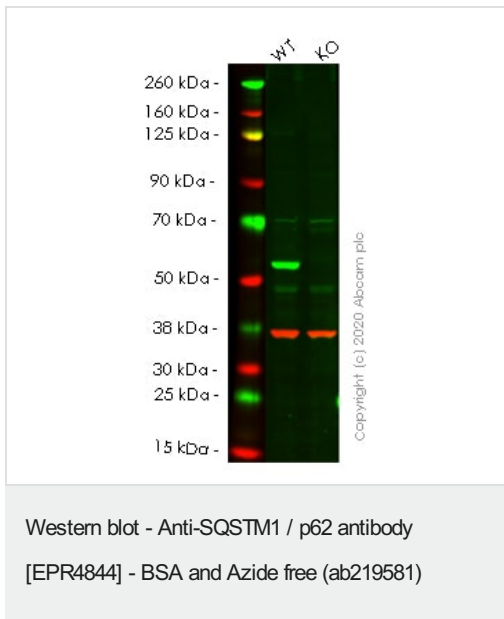
Cytoplasm. Late endosome. Nucleus. Sarcomere (By similarity). In cardiac muscles localizes to the sarcomeric band (By similarity). Localizes to late endosomes. May also localize to the nucleus. Accumulates in neurofibrillary tangles and in Lewy bodies of neurons from individuals with Alzheimer and Parkinson disease respectively. Enriched in Rosenthal fibers of pilocytic astrocytoma. In liver cells, accumulates in Mallory bodies associated with alcoholic hepatitis, Wilson disease, indian childhood cirrhosis and in hyaline bodies associated with hepatocellular carcinoma.

## Images



This data was developed using the same antibody clone in a different buffer formulation ([ab109012](#)). [ab109012](#) staining SQSTM1 in wild-type Hap1 cells and SQSTM1 knockout Hap1 cells treated with chloroquine ([ab142116](#), 50µM for 24 hrs). The cells were fixed with 100% methanol (5 min) or with 4% paraformaldehyde (10 min) then 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 [ab109012](#) at 0.1µg/ml concentration and [ab7291](#) (Mouse monoclonal to alpha Tubulin) at 1/1000 dilution 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) and a goat secondary antibody to mouse IgG (Alexa Fluor® 594) ([ab150120](#)) at 2 µg/ml (shown in red). Nuclear DNA was labelled in blue with DAPI. Image was taken with a confocal microscope (Leica-Microsystems TCS SP8).  
Residual signal is observed in KO cells when paraformaldehyde is used for fixation, therefore we recommend using methanol fixation with this antibody. Alternatively, please use [ab240635](#) or [ab207305](#)

which have been KO validated in both paraformaldehyde and methanol fixed cells.



**All lanes :** Anti-SQSTM1 / p62 antibody [EPR4844] -

Autophagosome Marker (**ab109012**) at 1/10000 dilution

**Lane 1 :** Wild-type HEK293T cell lysate

**Lane 2 :** SQSTM1 knockout HEK293T cell lysate

Lysates/proteins at 20 µg per lane.

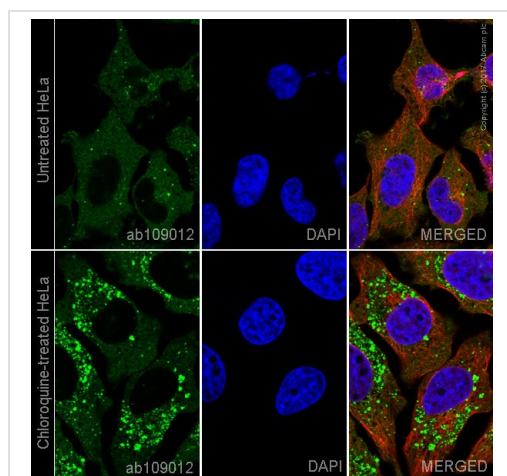
Performed under reducing conditions.

**Observed band size:** 64 kDa

This data was developed using the same antibody clone in a different buffer formulation (**ab109012**).

**Lanes 1- 2:** Merged signal (red and green). Green - **ab109012** observed at 64 kDa. Red - Anti-GAPDH antibody [6C5] - Loading Control (**ab8245**) observed at 37 kDa.

**ab109012** was shown to react with SQSTM1/p62 in wild-type HEK293T cells in western blot. Loss of signal was observed when knockout cell line **ab255343** (knockout cell lysate **ab263770**) was used. Wild-type HEK293T and SQSTM1 knockout HEK293T 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. **ab109012** and Anti-GAPDH antibody [6C5] - Loading Control (**ab8245**) 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.

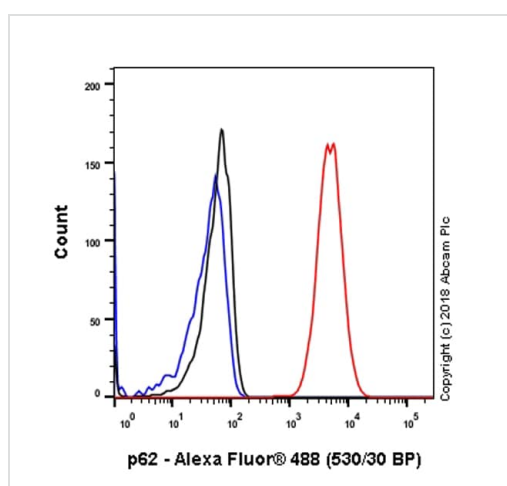


Immunocytochemistry/ Immunofluorescence - Anti-SQSTM1 / p62 antibody [EPR4844] - BSA and Azide free (ab219581)

Purified **ab109012** staining SQSTM1/p62 in HeLa cells +/- Chloroquine (50µM, 24 hours). The cells were fixed with 100% methanol (5 min), 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 overnight at +4°C with **ab109012** at 1µg/ml and **ab195889**, Mouse monoclonal to alpha Tubulin (Alexa Fluor® 594), at 1/250 dilution (shown in pseudocolor red) 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 with DAPI (shown in blue).

Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).

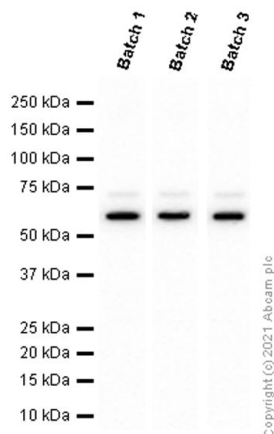
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab109012**).



Flow Cytometry (Intracellular) - Anti-SQSTM1 / p62 antibody [EPR4844] - BSA and Azide free (ab219581)

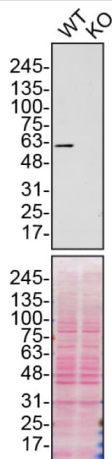
Intracellular Flow Cytometry analysis of HeLa (Human cervix adenocarcinoma epithelial cell) cells labeling SQSTM1 / p62 with purified **ab109012** at 1/50 dilution (10µg/ml) (Red). Cells were fixed with 80% Methanol and permeabilised with 0.1% Tween-20. A Goat anti rabbit IgG (Alexa Fluor® 488, **ab150077**) 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).

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab109012**).



Western blot - Anti-SQSTM1 / p62 antibody  
[EPR4844] - BSA and Azide free (ab219581)

This data was developed using [ab109012](#), the same antibody clone in a different buffer formulation. Different batches of [ab109012](#) were tested on MCF7 (Human breast adenocarcinoma epithelial cell) lysate at 0.4 µg/ml. 15 µg of lysate was loaded in each lane. Bands observed at 62 kDa.



Western blot - Anti-SQSTM1 / p62 antibody  
[EPR4844] - BSA and Azide free (ab219581)

**All lanes :** Anti-SQSTM1 / p62 antibody [EPR4844] -  
Autophagosome Marker ([ab109012](#)) at 1/10000 dilution

**Lane 1 :** Wild-type U-2 OS cell lysate

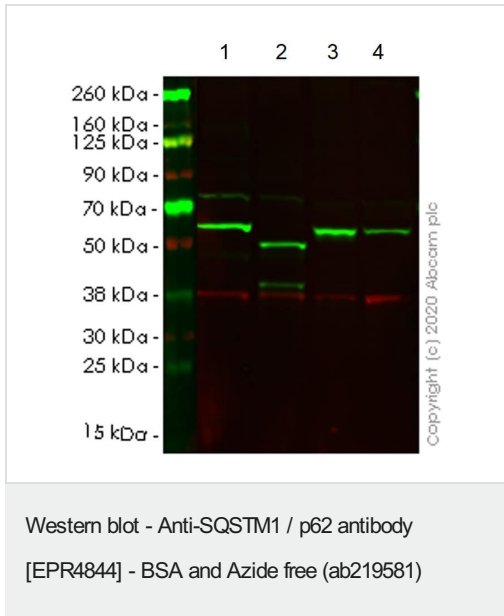
**Lane 2 :** SQSTM1 knockout U-2 OS cell lysate

Lysates/proteins at 20 µg per lane.

Performed under reducing conditions.

This data was developed using the same antibody in a different buffer formulation ([ab109012](#)).

[ab109012](#) was shown to react with SQSTM1 in wild-type U-2 OS cells in Western blot with loss of signal observed in a SQSTM1 knockout cell line. Wild-type U-2 OS and SQSTM1 knockout cell lysates were subjected to SDS-PAGE. Membranes were blocked in 5% milk in TBST for 1 hr before incubation with [ab109012](#) overnight at 4 °C at a 1/10000 dilution. Blots were incubated with goat anti-rabbit HRP secondary antibodies at 0.2µg/mL before imaging. These data were 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.



**All lanes :** Anti-SQSTM1 / p62 antibody [EPR4844] - Autophagosome Marker ([ab109012](#))

**Lane 1 :** Wild-type HCT116 cell lysate

**Lane 2 :** SQSTM1 CRISPR/Cas9 edited HCT116 cell lysate

**Lane 3 :** HepG2 cell lysate

**Lane 4 :** HeLa cell lysate

Lysates/proteins at 20 µg per lane.

## Secondary

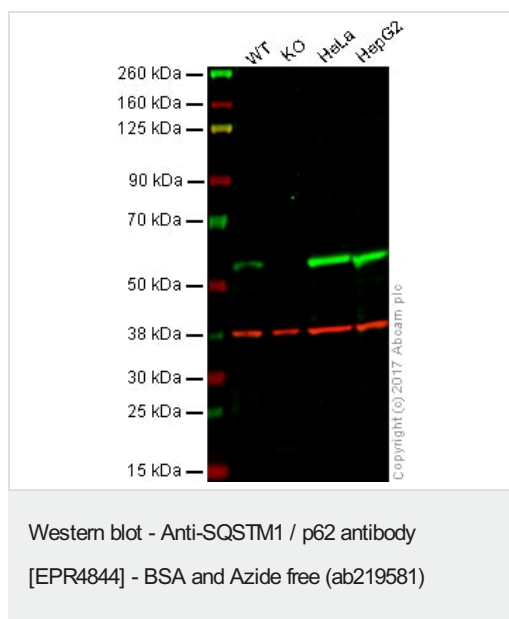
**All lanes :** Goat anti-Rabbit IgG H&L (IRDye® 800CW) preadsorbed ([ab216773](#)) at 1/10000 dilution

**Observed band size:** 55 kDa

This data was developed using [ab109012](#), the same antibody clone in a different buffer formulation.

**Lanes 1-4:** Merged signal (red and green). Green - [ab109012](#) observed at 55 kDa. Red - loading control [ab8245](#) observed at 36 kDa.

[ab109012](#) Anti-SQSTM1 / p62 antibody [EPR4844] - Autophagosome Marker was shown to specifically react with SQSTM1 / p62 in wild-type HCT116 cells. The band observed in CRISPR/Cas9 edited cell line [ab266871](#) (CRISPR/Cas9 edited cell lysate [ab257052](#)) lane below 55 kDa may represent truncated forms and cleaved fragments. This has not been investigated further. Wild-type and SQSTM1 / p62 CRISPR/Cas9 edited samples were subjected to SDS-PAGE. [ab109012](#) and Anti-GAPDH antibody [6C5] - Loading Control ([ab8245](#)) were and 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 :** Anti-SQSTM1 / p62 antibody [EPR4844] - Autophagosome Marker ([ab109012](#)) at 1/10000 dilution

**Lane 1 :** Wild-type HAP1 whole cell lysate

**Lane 2 :** SQSTM1 knockout HAP1 whole cell lysate

**Lane 3 :** HeLa whole cell lysate

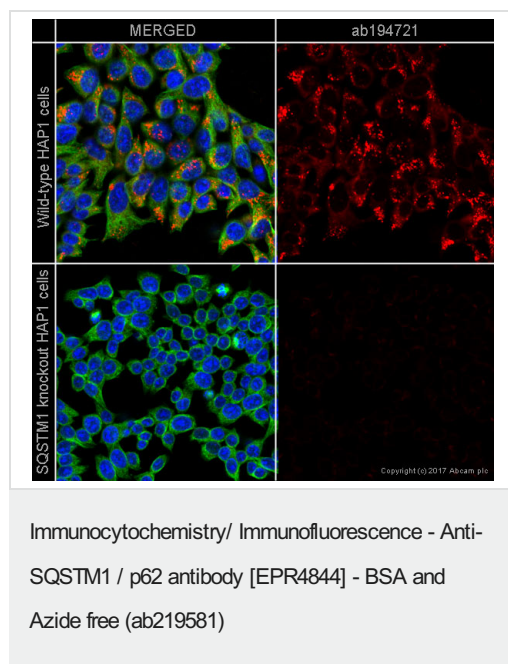
**Lane 4 :** HepG2 whole cell lysate

Lysates/proteins at 20 µg per lane.

**Lanes 1 - 4:** Merged signal (red and green). Green - unpurified [ab109012](#) observed at 55 kDa. Red - loading control, [ab8245](#), observed at 37 kDa.

[ab109012](#) was shown to specifically react with SQSTM1 in wild-type HAP1 cells. No band was observed when SQSTM1 knockout samples were used. Wild-type and SQSTM1 knockout samples were subjected to SDS-PAGE, Ab109012 and [ab8245](#) (Mouse anti GAPDH loading control) were incubated overnight at 4°C at 1/10,000 dilution and 1/20,000 dilution respectively. Blots were developed 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 1/20,000 dilution for 1 hour at room temperature before imaging.

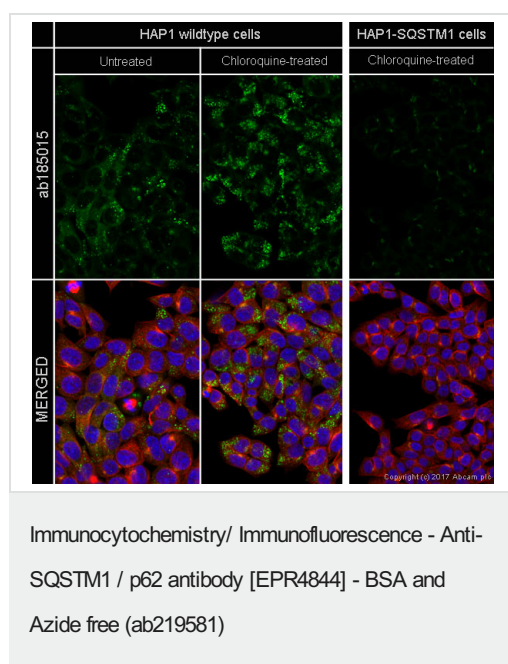
This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide ([ab109012](#)).



Clone EPR4844 (ab219581) has been successfully conjugated by Abcam. This image was generated using Anti-SQSTM1 / p62 antibody [EPR4844] (Alexa Fluor® 647). Please refer to [ab194721](#) for protocol details.

[ab194721](#) staining SQSTM1 in wild-type HAP1 cells (top panel) and SQSTM1 knockout HAP1 cells (bottom panel). The cells were fixed with 100% methanol (5min), 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 [ab194721](#) at 1/500 (shown in red) and [ab195887](#) at 1/250 dilution (shown in green). Nuclear DNA was labelled in blue with DAPI.

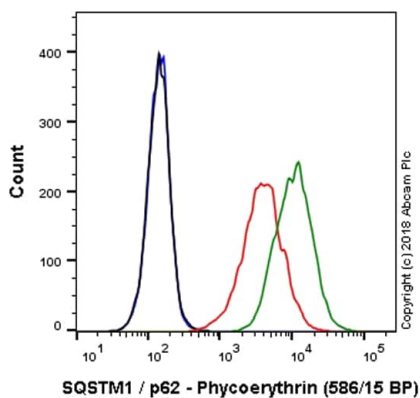
Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).



Clone EPR4844 (ab219581) has been successfully conjugated by Abcam. This image was generated using Anti-SQSTM1 / p62 antibody [EPR4844] - Autophagosome Marker (Alexa Fluor® 488). Please refer to [ab185015](#) for protocol details.

[ab185015](#) staining SQSTM1 in wild-type HAP1 cells, untreated and chloroquine-treated (50μM, 24 hours) and chloroquine-treated SQSTM1 knockout HAP1 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 overnight at +4°C with [ab185015](#) at 1/500 dilution (shown in green) and [ab195889](#), Mouse monoclonal to alpha Tubulin (Alexa Fluor® 594), at 1/250 dilution (shown in pseudocolor red). Nuclear DNA was labelled with DAPI (shown in blue).

Image was taken with a confocal microscope (Leica-Microsystems, TCS SP8).



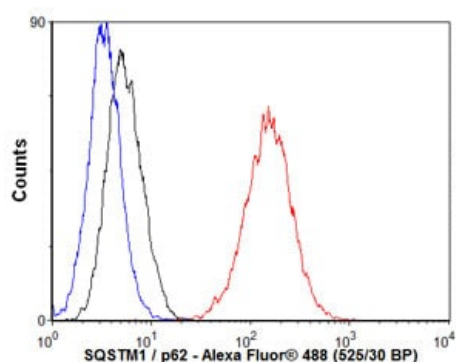
Flow Cytometry (Intracellular) - Anti-SQSTM1 / p62 antibody [EPR4844] - BSA and Azide free (ab219581)

Clone EPR4844 (ab219581) has been successfully conjugated by Abcam. This image was generated using Anti-SQSTM1 / p62 antibody [EPR4844] - Autophagosome Marker (PE). Please refer to [ab225094](#) for protocol details.

Overlay histogram showing HeLa cells untreated (red line) and HeLa cells treated with Chloroquine, 50µM, 24 hours, (green line) stained with [ab225094](#). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Triton X-100 for 15 min. The cells were then incubated in 1x PBS / 10% normal goat serum to block non-specific protein-protein interactions followed by the antibody ([ab225094](#), 1/10000 dilution) for 30 min at 22°C.

Isotype control antibody (black line) was Rabbit IgG (monoclonal) Phycoerythrin ([ab209478](#)) used at the same concentration and conditions as the primary antibody. Unlabelled sample (blue line) was also used as a control.

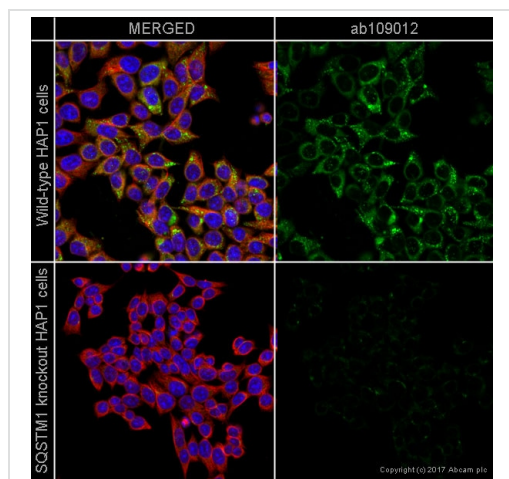
Acquisition of >5,000 events were collected using a 50 mW Yellow/Green laser (561nm) and 586/15 bandpass filter.



Flow Cytometry (Intracellular) - Anti-SQSTM1 / p62 antibody [EPR4844] - BSA and Azide free (ab219581)

Overlay histogram showing HeLa cells stained with unpurified [ab109012](#) (red line). The cells were fixed with 80% methanol (5 min) and then permeabilized with 0.1% PBS-Tween for 20 min. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody ([ab109012](#), 1/100 dilution) for 30 min at 22°C. The secondary antibody used was Alexa Fluor® 488 goat anti-rabbit IgG (H+L) ([ab150077](#)) at 1/2000 dilution for 30 min at 22°C. Isotype control antibody (black line) was rabbit IgG (monoclonal) (1µg/1x10<sup>6</sup> cells) used under the same conditions. Unlabelled sample (blue line) was also used as a control. Acquisition of >5,000 events were collected using a 20mW Argon ion laser (488nm) and 525/30 bandpass filter.

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide ([ab109012](#)).



Immunocytochemistry/ Immunofluorescence - Anti-SQSTM1 / p62 antibody [EPR4844] - BSA and Azide free (ab219581)

Purified **ab109012** staining SQSTM1 in wild-type HAP1 cells (top panel) and SQSTM1 knockout HAP1 cells (bottom panel). The cells were fixed with 100% methanol (5min), 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 **ab109012** at 1 µg/ml 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).

This data was developed using the same antibody clone in a different buffer formulation containing PBS, BSA, glycerol, and sodium azide (**ab109012**).

Why choose a recombinant antibody?

**Research with confidence**  
Consistent and reproducible results

**Long-term and scalable supply**  
Recombinant technology

**Success from the first experiment**  
Confirmed specificity

**Ethical standards compliant**  
Animal-free production

Anti-SQSTM1 / p62 antibody [EPR4844] - BSA and Azide free (ab219581)

**Please note:** All products are "FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC PROCEDURES"

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