abcam

ab55474

Anti-NBR1 antibody [5C3]

Key facts

Isotype	IgG2a
Host species	Mouse
Storage buffer	pH: 7.4 Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Recombinant Fragment Protein within Human NBR1 aa 1-100. The exact immunogen used to generate this antibody is proprietary information. Database link Q14596
Carrier free	Yes
Clone number	5C3
Purity	Tissue culture supernatant
Light chain type	kappa

Reactivity data

IP

Expected

Species	Recombinant fragment, Mouse, Human
Dilution info	Use at an assay dependent concentration.
Notes	-

Not recommended

Species	Recombinant fragment - Human
Dilution info	-
Notes	-

Flow Cyt

Tested

Species	Human
Dilution info	-
Notes	ab170191 - Mouse monoclonal IgG2a, is suitable for use as an isotype control with this antibody.

Predicted

Species	Mouse
Dilution info	-
Notes	-

Not recommended

Species	Recombinant fragment, Recombinant fragment - Human
Dilution info	-
Notes	-

WB

Tested

Species	Recombinant fragment - Human
Dilution info	-
Notes	Predicted molecular weight: 107 kDa.

Expected

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

Predicted

Species	Mouse
Dilution info	-
Notes	-

Not recommended

Species	Recombinant fragment
Dilution info	-
Notes	-

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

Predicted

Species	Mouse
Dilution info	-
Notes	-

Not recommended

Species	Recombinant fragment, Recombinant fragment - Human
Dilution info	-
Notes	-

Target data

See full target information NBR1

Function	Ubiquitin-binding autophagy adapter that participates in different processes including host defense or intracellular homeostasis (PubMed:24692539, PubMed:33577621). Possesses a double function during the selective autophagy by acting as a shuttle bringing ubiquitinated proteins to autophagosomes and also by participating in the formation of protein aggregates (PubMed:24879152, PubMed:34471133, PubMed:38169523). Plays a role in the regulation of the innate immune response by modulating type I interferon production and targeting ubiquitinated IRF3 for autophagic degradation (PubMed:35914352). In response to oxidative stress, promotes an increase in SQSTM1 levels, phosphorylation, and body formation by preventing its autophagic degradation (By similarity). In turn, activates the KEAP1-NRF2/NFE2L2 antioxidant pathway (By similarity). Also plays non-autophagy role by mediating the shuttle of IL-12 to late endosome for subsequent secretion (By similarity).

Storage

Shipped at conditions	Blue Ice
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

This product was changed from ascites to tissue culture supernatant on 8/Oct/2019. Lot numbers higher than GR3274169 are from tissue culture supernatant. Please note that the dilutions may need to be adjusted accordingly. If you have any questions, please do not hesitate to contact our scientific support team.

Supplementary info

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

Activity summary	NBR1 also known as Neighbor of BRCA1 Gene 1 functions as a receptor for selective autophagy. It recognizes ubiquitinated proteins and delivers them to autophagosomes for degradation. The protein has a molecular weight of approximately 110 kDa. Scientists have observed its expression in a variety of

	tissues with particularly high levels in the testis and low levels in the lung and kidney.
Biological function summary	NBR1 plays a significant role in the removal of misfolded or damaged proteins through autophagy. It acts within the p62/SQSTM1 complex which links to the autophagic machinery. The complex recruits ubiquitinated substrates facilitating their degradation in lysosomes. Through this mechanism NBR1 helps maintain cellular homeostasis and genome integrity by removing potentially harmful elements.
Pathways	NBR1 integrates into the critical cellular recycling process known as autophagy. It works closely with proteins such as p62/SQSTM1 in the ubiquitin-proteasome pathway to ensure efficient protein turnover. The protein participates in signals that control cell growth and survival influencing the mTOR pathway which is important in regulating cellular metabolism growth and life span.
Associated diseases and disorders	Research indicates that NBR1 might have implications in neurodegenerative diseases like Alzheimer's and Parkinson's. Its involvement in autophagy suggests that malfunction or aberrant expression of NBR1 could lead to the accumulation of protein aggregates associated with these conditions. Additionally interactions with proteins such as LC3 and p62/SQSTM1 central in lysosomal degradation highlight its potential role in disease mechanisms where autophagy is disrupted.

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

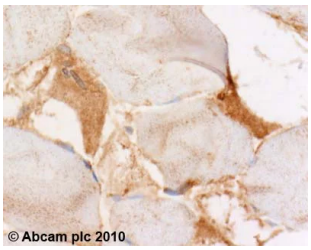
We do not recommend this combination. It is not covered by our product promise.

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.

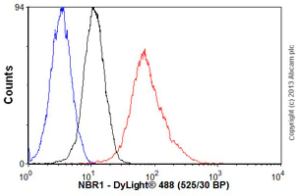
4 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-NBR1 antibody [5C3] (ab55474)

NBR1 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-NBR1 antibody

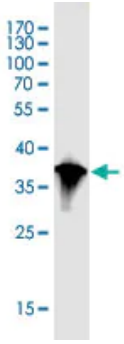
ab55474 (4µg/ml) staining NBR1 in human skeletal muscle using an automated system (DAKO Autostainer Plus). Using this protocol there is moderate cytoplasmic staining.
Sections were rehydrated and antigen retrieved with the Dako 3 in 1 AR buffers EDTA pH 9.0 in a DAKO PT link. Slides were peroxidase blocked in 3% H2O2 in methanol for 10 mins. They were then blocked with Dako Protein block for 10 minutes (containing casein 0.25% in PBS) then incubated with primary antibody for 20 min and detected with Dako envision flex amplification kit for 30 minutes. Colorimetric detection was completed with Diaminobenzidine for 5 minutes. Slides were counterstained with Haematoxylin and coverslipped under DePeX. Please note that, for manual staining, optimization of primary antibody concentration and incubation time is recommended. Signal amplification may be required.
This image was generated using the ascites version of the product.



Flow Cytometry - Anti-NBR1 antibody [5C3] (ab55474)

NBR1 Flow Cytometry staining using mouse Anti-NBR1 antibody

Overlay histogram showing HeLa cells stained with ab55474 (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 (ab55474, 1µg/1x10^6 cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG2a [ICIGG2A] (ab91361, 1µg/1x10^6 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 antibody gave a positive signal in HeLa cells fixed with 4% paraformaldehyde (10 min)/permeabilized with 0.1% PBS-Tween for 20 min used under the same conditions.
This image was generated using the ascites version of the product.



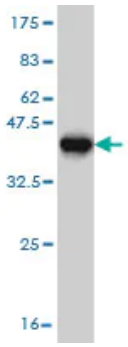
Western blot - Anti-NBR1 antibody [5C3] (ab55474)

Western blot against tagged recombinant protein immunogen using ab55474 NBR1 antibody at 1ug/ml. Predicted band size of immunogen is 37 kDa.
This antibody has only been tested in WB against the recombinant fragment used as immunogen. We have no data on the detection of endogenous protein.

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All lanes:
Western blot - Anti-NBR1 antibody [5C3] (ab55474)

Predicted band size: 107 kDa



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