abcam

ab228494

Anti-ATG12 antibody - N-terminal

Key facts

Isotype	IgG
Host species	Rabbit
Storage buffer	pH: 7 - 7.4
Form	Lyophilized
Clonality	Polyclonal
Immunogen	Synthetic Peptide within Human ATG12. The exact immunogen used to generate this antibody is proprietary information. Database link O94817
Purification technique	Affinity purification Protein G
Reconstitution	reconstitute with water at 500µL

Reactivity data

Flow Cyt (Intra)

Tested

Species	Human
Dilution info	2 µg/cells for 6 µg/cells
Notes	-

Target data

See full target information ATG12

Function	Ubiquitin-like protein involved in autophagy vesicles formation. Conjugation with ATG5 through a ubiquitin-like conjugating system involving also ATG7 as an E1-like activating enzyme and ATG10 as an E2-like conjugating enzyme, is essential for its function. The ATG12-ATG5 conjugate acts as an E3-like enzyme which is required for lipidation of ATG8 family proteins and their association to the vesicle membranes. As part of the ATG8 conjugation system with ATG5 and ATG16L1, required for recruitment of LRRK2 to stressed lysosomes and induction of LRRK2 kinase activity in response to lysosomal stress (By similarity). (Microbial infection) May act as a proviral factor. In association with ATG5, negatively regulates the innate antiviral immune response by impairing the type I IFN production pathway upon vesicular stomatitis virus (VSV) infection (PubMed:17709747). Required for the translation of incoming hepatitis C virus (HCV) RNA and, thereby, for the initiation of HCV replication, but not required once infection is established (PubMed:19666601).

Storage

Shipped at conditions	Blue Ice
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

Supplementary info

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

Activity summary	ATG12 also known as Autophagy-related protein 12 plays a critical role in autophagy an essential cellular process for degrading and recycling cellular components. The molecular weight of ATG12 is around 14 kDa. It is part of the ATG12-conjugation system and is invariably expressed in various tissues with notable presence in the liver brain and heart. ATG12 forms a covalent bond with ATG5 in a ubiquitin-like conjugation pathway which is significant for this mechanism.
Biological function summary	ATG12 is vital for the formation of autophagosomes which are double-membraned vesicles that sequester cellular components for degradation. It functions as part of a complex by binding to ATG5 and further associates with ATG16L1 to form a larger ATG12-ATG5-ATG16 complex. This complex localizes to the outer membrane of the growing autophagosome facilitating elongation and closure of the vesicle making it effective in the regulation of autophagy.

Pathways	ATG12's interaction with other proteins like ATG5 places it in the macroautophagy pathway an important process maintaining cellular homeostasis and turnover of cellular components. In addition to this ATG12 also contributes to cellular responses to stress conditions via this pathway. Furthermore it has connections with signaling pathways involving proteins such as LC3 which marks autophagosomal membranes and interacts with ATG12-conjugated complexes enhancing the autophagic flux.
Associated diseases and disorders	Researchers associate dysregulated expression of ATG12 with neurodegenerative diseases such as Parkinson's disease where impaired autophagy leads to toxic protein accumulation. Additionally alterations in ATG12 expression have links to cancer as enhanced autophagy in some tumor cells supports survival under metabolic stress. Both disorders demonstrate connections to proteins involved in the autophagy pathway suggesting therapeutic potential in modulating ATG12 activity.

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

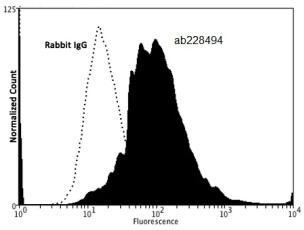
We do not recommend this combination. It is not covered by our product promise.

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1 product image



Flow Cytometry (Intracellular) - Anti-ATG12 antibody - N-terminal (ab228494)

ATG12 Flow Cytometry (Intracellular) staining using rabbit Anti-ATG12 antibody

Flow cytometric analysis of methanol-fixed, 0.1% Tween-20-permeabilized SH-SY5Y (human neuroblastoma cell line from bone marrow) cell line labeling ATG12 with ab228494 at 2 µg per 10^6 cells (black) compared with a Rabbit IgG Control (white). Donkey anti-Rabbit PE at 1/100 dilution was used as the secondary antibody.

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