

CATALOG OF ANTIBODIES FOR

AUTOPHAGY

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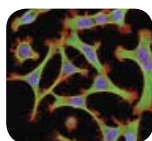
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Application Key

- ChIP** - Chromatin IP
- ELISA** - Elisa
- FACS** - Fluorescent Activated Cell Sorting
- ICC** - Immunocytochemistry
- IF** - Immunofluorescence
- IHC** - Immunohistochemistry
- IHC-Fr** - Immunohistochemistry Frozen
- IHC-P** - Immunohistochemistry Paraffin
- IP** - Immunoprecipitation
- WB** - Western Blot

Reactivity Key

- | | |
|------------------------|---------------------|
| Av - Avian | Ma - Mammal |
| Bv - Bovine | Mk - Monkey |
| Ce - C. Elegans | Mu - Mouse |
| Ch - Chicken | Pl - Plant |
| Dr - Drosophila | Po - Porcine |
| Fi - Fish | Rb - Rabbit |
| Ft - Ferret | Rt - Rat |
| Ha - Hamster | Sh - Sheep |
| Hu - Human | Ye - Yeast |



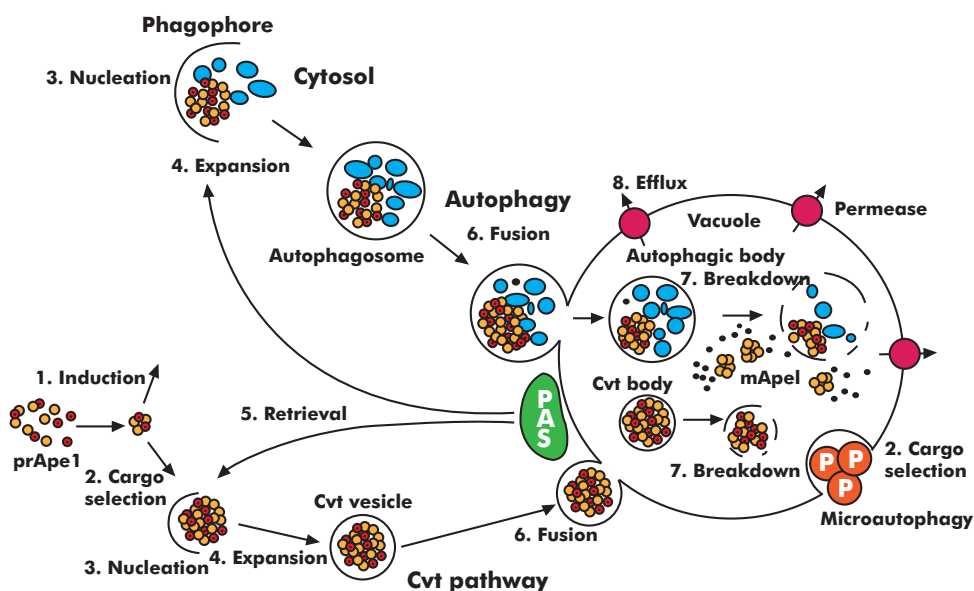
Cover Image: 2-photon fluorescence image of immortalized cultured human cancer (HeLa) cells stained to reveal the distribution of the cytoskeleton proteins beta-tubulin (green) and f-actin by phalloidin (red), as well as DNA in cell nuclei (blue).

Autophagy Research

Autophagy can be understood as a cell recycling system on its most basic level. Components of the cytoplasm are sequestered and moved into the lysosome/vacuole lumen where they are broken down into their basic components and returned to the cytosol for reuse. The autophagic process, however, is far more complex and varied than this oversimplification relates.

Autophagy can be divided into multiple subtypes: macroautophagy and microautophagy, specific and non-specific autophagy, as well as pexophagy, mitophagy and chaperone-mediated autophagy. Macroautophagy involves the creation of a phagophore, leading to the formation of the autophagosome which can consume whole organelles and deliver them to the lysosome for degradation, whereas microautophagy involves the sequestering of cytosolic components at the surface of the lysosome. Autophagy can act specifically, such as when it degrades the peroxisome or cleans bacteria from an infected host cell, or it can act non-specifically by consuming components of the cytosol in response to starvation cues in order to provide energy for the cell.

Links to cancer, hypoxia, and neurodegeneration, have brought autophagy to the forefront of scientific studies in recent years. It now appears that autophagy's ubiquitous role in cellular maintenance may mean that it plays some role in almost all disease states.



Cancer and Autophagy

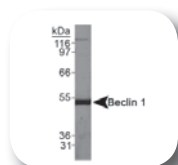
Autophagy was originally thought of as a mechanism for cell survival during starvation and as a cellular maintenance program. More recent studies have shown that particular autophagy proteins are suppressed or absent in many forms of cancer. For example, mice deficient in Beclin 1, a key protein in autophagy, exhibited marked increase tumorigenesis indicating that autophagy may suppress tumors in vivo in a normally functioning organism. However, these findings are clouded by evidence showing that

autophagy keeps tumor cells alive during therapies using starvation techniques. The recent elucidation of Atg's role in autophagy has also given rise to the possibility of developing cancer therapies that specifically target these and other autophagy-related proteins. What is known is that autophagy plays an extremely complicated and sometimes contradictory role in cell survival and death. As such, the study of autophagy's link to cancer will continue to be a growing area of research for the foreseeable future.

Beclin 1

The binding of Beclin 1 to the Pre-Autophagosomal structure initiates the formation of the autophagosome and is therefore required for autophagy. The absence of Beclin 1 leads to increased tumorigenesis as well as early embryonic death.

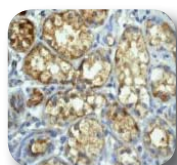
Beclin Antibody NB110-87318



Detection of Beclin 1 in HeLa whole cell lysate using NB110-87318 at 1:10,000.

Species: Hu, Mu, Rt
Applications: WB

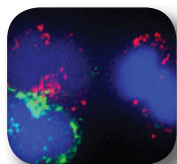
Beclin Antibody NB110-55556



Immunohistochemical staining of paraffin-embedded human breast tissue using NB110-55556.

Species: Hu
Applications: ICC, IHC, IP, WB

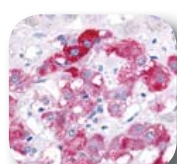
Beclin Antibody R-141-100



Immunofluorescent detection of Beclin-1 in human white blood cells using R-141-100.

Species: Hu
Applications: IF, IHC, WB

Beclin Antibody NB500-249

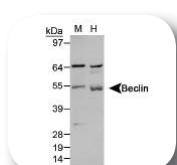


Staining of pheochromocytes of the Adrenal Medulla using NB500-249.

Species: Hu, Mu
Applications: IF, IHC, IHC-P, IP, WB

This antibody now comes conjugated.
NB500-249B (conjugated to Biotin)
NB500-249H (conjugated to HRP)
NB500-249L (conjugated to HiLyte Fluor™ 488)

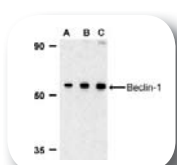
Beclin Antibody NB500-266



Detection of Beclin 1 in liver lysates using NB500-266.
Lane 1: mouse liver
Lane 2: human liver

Species: Hu, Mu
Applications: WB

Beclin Antibody NB100-55962



Detection of Beclin-1 in 293 cell lysate using NB100-55962.

Species: Hu, Mu, Rt
Applications: IHC, WB

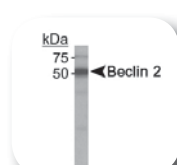
Beclin 2 Antibody NB110-60982



Detection of human Beclin 2 in HEK293 lysate using NB110-60982.

Species: Hu
Applications: WB

Beclin 2 Antibody NB110-60984



Detection of human Beclin 2 in MCC827 lysate using NB110-60984.

Species: Hu
Applications: WB

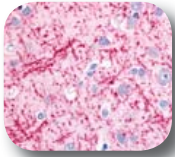
Write your own reviews of Novus' autophagy antibodies on Autophagy Journal's website. They have started an autophagy reagent wiki where researchers can post reagent reviews for autophagy related products. To post reviews, visit www.landesbioscience.com/reagent_blog/.

LC3 (also: MAP1LC3, In Yeast: Atg8, Apg8)

LC3 is the mammalian homolog of the yeast autophagy protein Atg8. LC3 is expressed in two post-translationally modified forms, LC3-I and LC3-II. LC3-I is found in the cytosol while LC3-II localizes to autophagosome membranes. LC3-II is currently the

only known marker for the presence of autophagic vesicles. In addition to acting as a marker for autophagosomes the conversion of LC3-I to LC3-II can be used to demonstrate the induction of autophagy.

LC3 Antibody NB100-2331



Staining of brain, cerebral cortex, cell processes in gray matter using NB100-2331

Species: Hu, Mu
Applications: IHC, IHC-P, IP, WB

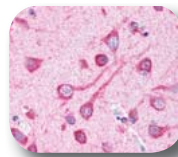
LC3B Antibody NB600-1384



Staining of treated U373-MG (human glioblastoma) cells using NB600-1384.

Species: Hu, Mu
Applications: ICC, IF, IHC, WB

LC3 Antibody NB100-2220



Staining of brain, cerebral cortex, neurons using NB100-2220.

Species: Hu, Mu, Rt
Applications: IHC, IHC-P, IP, WB

Also Available: LC3 Super Novus Pack: NB910-40435 (contains NB100-2220 and NB100-2331)
LC3/LC3B Super Novus Pack: NB910-40752 (contains NB100-2220, NB100-2331 and NB600-1384)
NB600-471 - Yeast Specific ATG8
R-140-100 - MAP1LC3 C
R-146-100 - MAP1LC3 A
R-155-100 - MAP1LC3 B

Conjugated LC3 Antibodies

NEW

Biotin:

NB100-2220B
NB100-2331B

NEW

HRP:

NB100-2220H
NB100-2331H

NEW

Hilyte fluor™ 488:

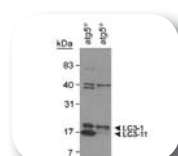
NB100-2220L
NB100-2331L

LC3 Antibody NB100-2331



Species: Hu, Mu
Applications: IHC, IHC-P, IP, WB

LC3 Antibody NB100-2220



Species: Hu, Mu, Rt
Applications: IHC, IHC-P, IP, WB

Detection of autophagic LC3 in mouse ES cell lysate using NB 100-2331.

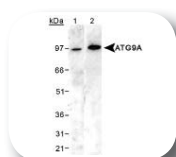
Detection of LC3 in human brain lysate using NB 100-2220.

ATG9

Atg9 is the only integral membrane protein required for autophagosome formation and considered a membrane carrier in autophagy-related pathways. It

is regulated via Atg1 and is found migrating between mitochondria and the pre-autophagosomal structure.

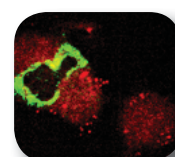
ATG9A Antibody NB110-56893



Species: Hu
Applications: WB

Detection of ATG9A protein in HEK293 lysates using NB110-56893.
Lane 1: siRNA ATG9A knockdown
Lane 2: wildtype ATG9A

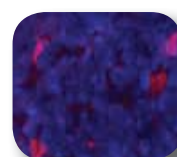
ATG9 L2 Antibody R-144-100



Species: Hu, Rt
Applications: IF, IHC, WB

Immunofluorescent detection of APG9 L2 in cytospin-isolated human white blood cells using R-144-100.

ATG9A Antibody R-160-100



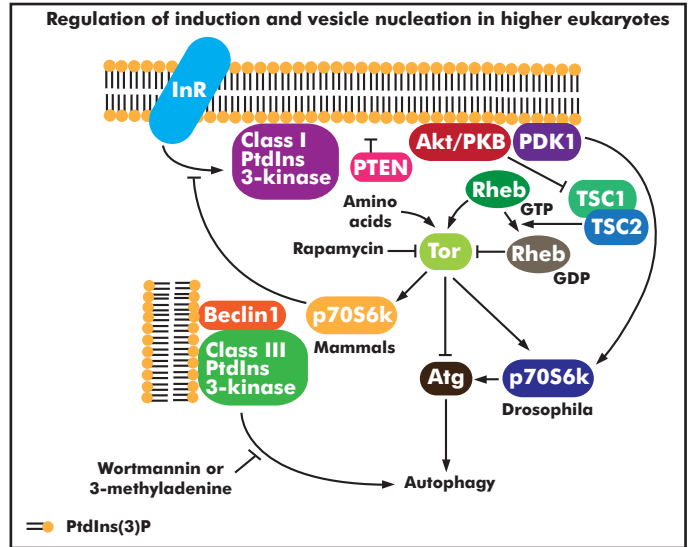
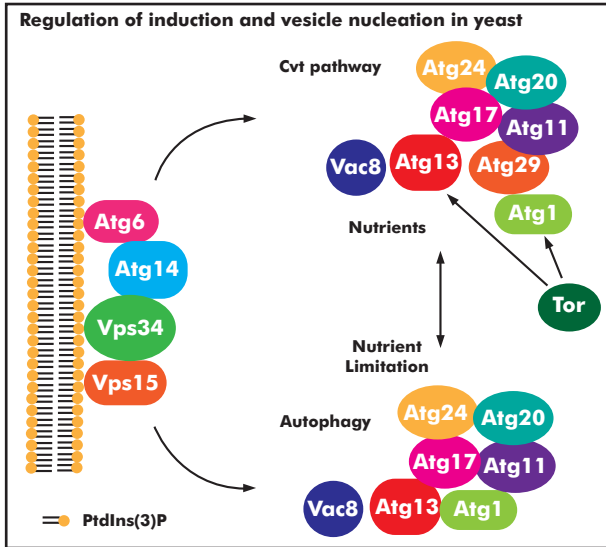
Species: Hu, Mu, Rt
Applications: IF, IHC, WB

Staining of mouse lymph node using R-160-100.

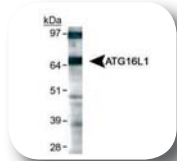
Macro and Microautophagy

Induction of macroautophagy occurs through a signaling event such as starvation, which causes a double-membrane vesicle to form, known as a phagophore. The vesicle then sequesters some part of the cytosol, possibly including organelles, after which the vesicle closes and is known as the autophagosome. The autophagosome then delivers its contents to the

lysosome where the proteins and organelles are then degraded into their most basic cellular components. Microautophagy differs only in that the lysosome or vacuole sequester proteins for degradation directly on their membrane surface, thus there is no transport vesicle. The functional differences between macro and micro-autophagy are still being elucidated.



ATG16L1 Antibody NB110-60928



Detection of ATG16L1 in HeLa whole cell extracts.

Species: Hu
Applications: WB

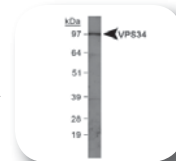
ATG9A Antibody NB110-56893



Detection of ATG9A in HEK293 lysates using NB110-56893. Lane 1: siRNA ATG9A knockdown Lane 2: wildtype ATG9A

Species: Hu
Applications: WB

VPS34 Antibody NB110-87320



Detection of VPS34 in HepG2 whole cell lysates using NB110-87320.

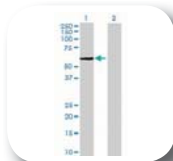
Species: Hu
Applications: WB

APG16L

The APG12-APG5-APG16L complex is essential for the elongation of autophagic isolation membranes. This complex initially associates in uniform distribution with small vesicle membranes. During membrane elongation, the complex partitions, with a great

concentration building on the outer side of the isolation membrane. Upon complete formation of the autophagosome, the APG12-APG5-APG16L dissociates from the membrane. There are five isoforms of APG16L found in humans.

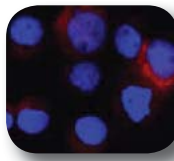
ATG16L1 Antibody H00055054-B01



Detection of ATG16L1 in transfected 293T cell line using H00055054-B01.

Species: Hu
Applications: ELISA, WB

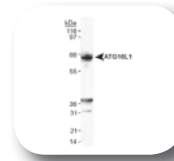
APG16L Antibody R-158-100



Immunofluorescent detection of APG16L1 in HL60 cells using R-158-100.

Species: Hu, Rt
Applications: IF, IHC, WB

ATG16L1 Antibody NB110-82384



Detection of ATG16L1 in NIH/3T3 whole cell lysates using NB110-82384.

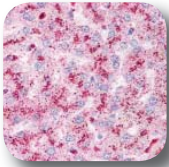
Species: Mu
Applications: WB

ATG5

Atg5 complexes with Atg12 and is required for the formation of the autophagosome. Atg5 is heavily

expressed in dead tumor cells, making it a marker for successful anti-cancer therapies.

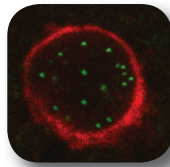
ATG5 Antibody NB110-53818



Staining of liver hepatocytes using NB110-53818.

Species: Mu, Hu
Applications: IHC, WB

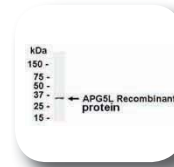
ATG5 Antibody R-111-100



Staining of paraffin-embedded human brain section using R-111-100.

Species: Hu
Applications: IF, IHC, IHC-P, WB

Atg5L Antibody NB300-368



Western analysis of Atg5L on recombinant protein using NB300-368.

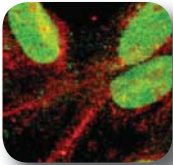
Species: Hu, Mu
Applications: ICC, WB

Tor (FRAP1)

Tor or Target of Rapamycin activates p70S6k, thereby inducing autophagy in response to a stress signal such as nutrient depletion. Tor can inhibit progression

through the G1 cell cycle phase by interfering with mitogenic signaling pathways.

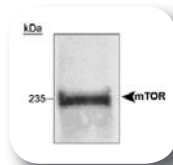
mTOR Antibody NB100-240



Immunofluorescence detection of mTOR (red), in L6 myotubes using NB100-240.

Species: Hu, Rt
Applications: ICC, IF, IP

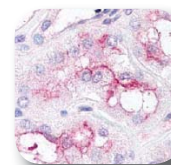
mTOR SuperNovus Pack NB100-932



Detection of mTOR in rat liver using NB100-932.

Species: Hu, Mu, Rt
Applications: IP, WB

Tor phospho Ser2448 Antibody NB600-607



Staining of human kidney using NB600-607.

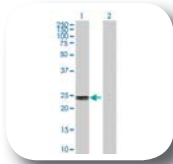
Species: Hu
Applications: ELISA, IHC-P, WB

ATG12

The delivery of cytoplasmic components to the lysosome/vacuole for degradation requires a ubiquitin-like protein conjugation system, in which

Apg12 is covalently bound to Apg12-Apg5 and Apg16. The initial conjugation is mediated by Apg7 and Apg10.

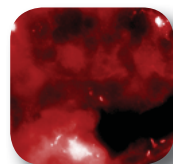
ATG12 Antibody H00009140-B01



Western Blot analysis of ATG12 expression in transfected 293T cell line by ATG12 MaxPab polyclonal antibody.

Species: Hu
Applications: ELISA, WB

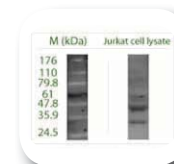
ATG12 Antibody R-112-100



Immunofluorescence detection of APG12 in paraffin-embedded rat testis using R-112-100.

Species: Hu, Rt
Applications: IF, IHC, WB

ATG12 Antibody R-158-100



Detection of APG16 on non-reduced Jurkat cell lysate using R-158-100.

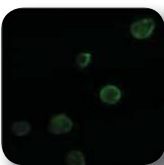
Species: Hu, Rt
Applications: IF, IHC, WB

Calreticulin

Calreticulin mediates the clearance of dead cells by signaling phagocytes for cell consumption. Calreticulin is highly expressed in phagocytotic cells and dying cells

and may therefore function as a marker for these types of cells.

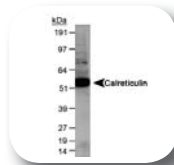
Calreticulin Antibody NB600-101



Immunofluorescence staining of Calreticulin in HCT15 colon cancer cells using NB600-101.

Species: Bv, Ha, Hu, Mu, Rt
Applications: ICC, IF, IHC, IP, WB

Calreticulin Antibody NB600-103



Detection of Calreticulin in human kidney lysate using NB600-103.

Species: Hu
Applications: WB

Calreticulin Antibody NB300-545



Immunofluorescent staining of calreticulin in rat brain cortex using NB300-545.

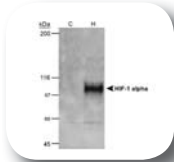
Species: Hu, Rt, Rb
Applications: IF, IP, WB

Hypoxia and Autophagy

Hypoxia is a critical factor for cell death or survival in ischemic stroke, but the pathological consequences of combined ischemia-hypoxia are not fully understood. The combination of hypoxia and ischemia may trigger pathological events that are not induced by ischemia alone. A potential consequence of combined ischemia-hypoxia is autophagy. Although autophagy is generally a cell survival and developmental mechanism,

massive autophagy is associated with cell death and it plays a wide variety of physiological and pathophysiological roles. The involvement of autophagy in ischemic heart and brain has only been described recently. It is thought that the combination of ischemia and hypoxia accelerate an energy crisis and precipitate autophagy.

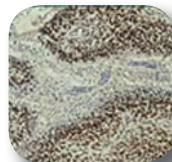
HIF-1 alpha Antibody NB100-105



Detection of HIF-1 alpha in cobalt chloride induced COS-7 nuclear extracts (NB800-PC26) using NB100-105.

Species: Bv, Hu, Mu, Po, Mk, Rt, Ft, Sh
Applications: ChIP, IF, IHC, IHC-Fr, IP, WB

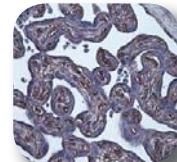
HIF-1 beta Antibody NB100-124



Immunohistochemical staining of human glioblastoma multi-forme utilizing (NB100-124).

Species: Bv, Hu, Mu, Rt, Ft, Sh
Applications: IHC-P, WB

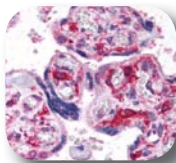
HIF-1 alpha Antibody NB100-131



Staining of human placenta using NB100-131.

Species: Bv, Hu, Mu, Rt
Applications: ICC, IF, IHC, IHC-Fr, IHC-P, IP

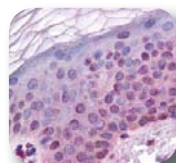
HIF-1 alpha Antibody NB100-479



Staining of placenta, villi using NB100-479.

Species: Hu, Mu, Mk, Rt
Applications: IHC, IHC-P, WB

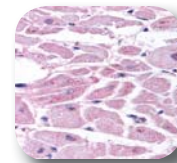
HIF-1 beta Antibody NB100-110



Staining of skin, epidermis using NB100-110.

Species: Bv, Hu, Mu, Rt, Ft, Sh
Applications: IHC, IP, WB

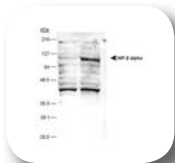
HIF-2 alpha Antibody NB100-122



Staining of human cardiac myocytes using NB100-122.

Species: Hu, Mu, Rt, Fi
Applications: IHC, WB

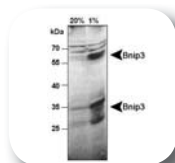
HIF-2 alpha Antibody NB100-132



Detection of HIF-2 alpha in hypoxic human lysate using NB 100-132. Lane 1: normoxic A549 lysate control, lane 2: hypoxic A549 lysate.

Species: Hu, Mu, Rt
Applications: IHC-P, WB

Bnip3 Antibody NB110-60562



Detection of BNIP3 in hypoxic Hep3b lysate using NB110-60562.

Species: Hu
Applications: WB

Hydroxylated P564 Antibody NB110-74679



Detection of wild type FLAG-HIF-1 alpha (WT), but not the Pro-to-Ala double mutant (P/A), by the anti-hydroxy-Pro564 antibody NB110-74679.

Species: Hu
Applications: WB

Antibody Grants

WANT YOUR ANTIBODY PRODUCED FOR FREE?

Visit our website, www.novusbio.com and fill out the Antibody Grant Sheet for a chance to receive 2 mgs of FREE antibody!

Grant Award Date: 1 Award selected on the 15th of every month. Awardees will receive a 0.2 mg test sample of affinity purified rabbit sera. (Typical antibody production takes 4-5 months). If the product works and you supply the necessary documentation, you will receive **2 mgs** of affinity purified antibody in exchange for product feedback. Submit by the end of the month to be selected in the following month's drawing by fax (below) or email (novus@novusbio.com).

Neurodegeneration and Autophagy

The majority of neurodegenerative disorders are caused by the intercellular aggregation of misfolded and/or improperly altered proteins. Autophagy plays a critical role in the removal of these proteins from the cytosol. When autophagy fails, it may lead to the build-up of these proteins and therefore play a significant role in

these neurodegenerative disorders. Studies performed by Drs. He and Klionsky on neuron-specific knockout mice show that a lack of autophagic response leads to protein aggregation and neurodegeneration, even in the absence of disease-related aggregate-prone proteins.

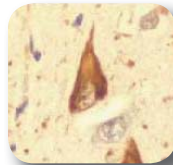
NMDA receptor 2B Antibody NB300-106



Detection of NR2B in rat hippocampus using NB300-106.

Species: Hu, Rt
Applications: IHC, IP, WB

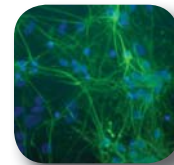
Ubiquitin Antibody NB300-130



Immunohistochemical staining of Ubiquitin in hippocampal tissue from an Alzheimer patient, using NB300-130.

Species: Bv, Ch, Dr, Hu, Mu, Ce, Pl
Applications: ELISA, IHC, IHC-Fr, IHC-P, WB

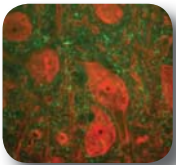
Neurofilament light chain Antibody NB300-132



Neurofilament staining of cultured neurons (green) with the Neurofilament light chain antibody (NB300-132). Nuclei are stained blue.

Species: Hu, Ma, Av
Applications: IF, IHC, WB

Neurofilament heavy chain Antibody NB300-135



Section of rat spinal cord stained with NB300-135 (green) and anti-(UCHL1) NB110-58869 (red).

Species: Hu, Ma, Mu, Mk, Rt
Applications: IHC-Fr, IHC-P, WB

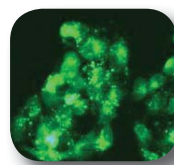
Neurofilament medium chain Antibody NB300-133



Detection of NF-M in rat cerebellum using NB300-133.

Species: Bv, Hu, Ma, Mu, Po, Rt, Fe, Av
Applications: ICC, IF, IHC-Fr, IHC-P, WB

Apolipoprotein E Antibody NB110-55466



Immunofluorescent staining of HEP G2 cells using NB110-55466.

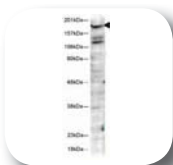
Species: Hu, Mu
Applications: ICC, IHC, IP, WB

Huntington's Disease

Huntington's disease (HD) is a neurodegenerative disorder caused by an expanding polyglutamine repeat in the huntingtin gene. Numerous papers in recent

years have shown that the autophagic process works to clear huntingtin aggregates and that blocking autophagy leads to a build up of these aggregates.

Huntingtin Antibody NB600-646



Detection of Huntingtin (phospho S421) in human PC3 whole cell lysate using NB600-646.

Species: Hu, Po
Applications: ELISA, WB

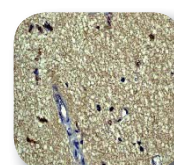
Huntingtin Antibody NB110-74569



Staining of rat hypothalamus using NB110-74569.

Species: Hu, Mu, Rt
Applications: IHC-Fr, IHC-P, IP, WB

Huntingtin Protein (Htt) Antibody NB110-57069



Immunohistochemical analysis of paraffin-embedded human brain tissue using NB110-57069.

Species: Hu, Mu, Rt
Applications: FACS, ICC, IHC, WB

Huntingtin Antibody NB600-1198



Detection of Huntingtin in normal human cerebral cortex using NB600-1198.

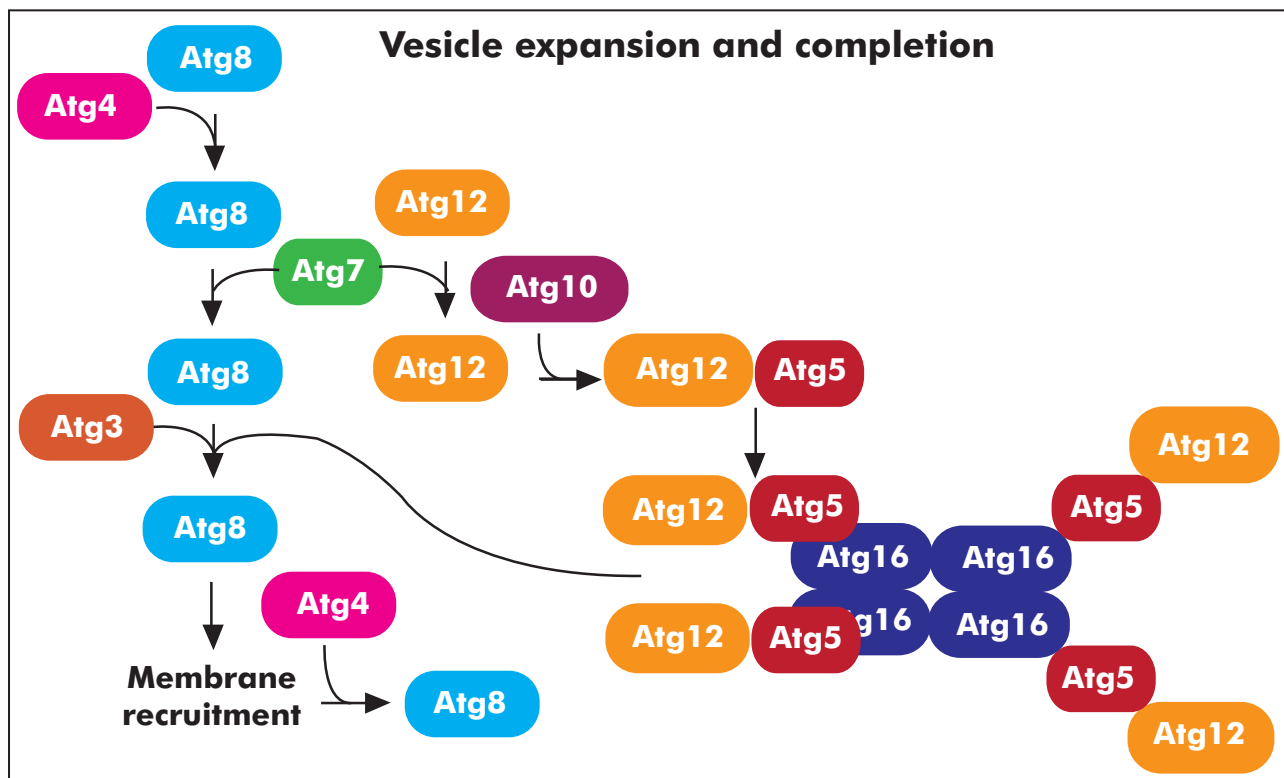
Species: Hu, Mu, Rt
Applications: IHC, IP, WB

Abnova, Acris, biosensis, Innova

Novus distributes for these companies:



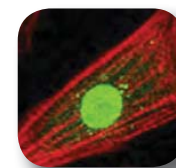
Innova Biosciences



Additional Autophagy Antibodies (more on web)

Catalog#	Product	Host	Type	Application	Species
NB600-608	AKT	Polyclonal	Rabbit	IHC, IF, IP, WB, ICC	Hu
NB600-590	AKT [Ser473]	Polyclonal	Rabbit	ELISA, IHC, IF, WB	Hu
NB600-593	AKT [Thr308]	Polyclonal	Rabbit	WB, ELISA	Hu
NB100-59849	AktS1/PRAS40	Polyclonal	Rabbit	WB, IP	Hu
NB100-1727	AMPK alpha 1	Polyclonal	Rabbit	IHC	Hu, Mu
NB100-239	AMPK alpha 1	Polyclonal	Rabbit	WB, IP	Bv, Hu, Rt
NB100-238	AMPK alpha 2	Polyclonal	Rabbit	IP, WB	Hu, Rt, Bv
NB100-101	APE/Ref-1	Polyclonal	Rabbit	IHC, WB	Hu, Mu, Rt
NB100-116	APE/Ref-1 (13B8E5C2)	Monoclonal	Mouse	IHC, WB	Hu, Mu, Rt
NB100-909	APE/Ref-1 Antibody SuperNovus Pack	Both	Mouse/Rabbit	WB, IHC, IP	Hu, other
H00064422-A01	APG3L	Polyclonal	Mouse	ELISA, WB	Hu
H0009474-M01	APG5L (3D2)	Monoclonal	Mouse	ELISA, WB	Hu
R-145-100	ATG10	Polyclonal	Rabbit	IHC, IF	Hu
R-112-100	ATG12	Polyclonal	Rabbit	IHC, IF, WB	Hu, Rt
NB110-74837	ATG16L1	Polyclonal	Rabbit	IHC, WB	Hu
R-159-100	ATG3	Polyclonal	Rabbit	IHC, IF, WB	Hu, Rt
R-157-100	ATG4B	Polyclonal	Rabbit	IHC, WB, IF	Hu, Rt
R-156-100	ATG4C	Polyclonal	Rabbit	IHC, WB, IF	Hu, Rt
H0009474-M08	ATG5 (4B2)	Monoclonal	Mouse	ELISA, WB	Hu
NB300-368	ATG5L	Polyclonal	Chicken	WB, ICC	Hu, Mu
NB100-55958	ATG7	Polyclonal	Rabbit	WB	Hu, Mu
NB110-55474	ATG7 (EP1759Y)	Monoclonal	Rabbit	FACS, IHC, IP, WB, ICC	Hu, Mu(-), Rt(-)
NB600-471	ATG8	Polyclonal	Rabbit	ELISA, WB	Ye
R-160-100	ATG9A	Polyclonal	Rabbit	IHC, IF, WB	Hu, Rt
NB110-74834	ATG9B	Polyclonal	Rabbit	IHC, WB	Hu
NB110-74836	ATG9B	Polyclonal	Rabbit	IHC, WB	Mu
NB110-41536	ATGL	Polyclonal	Rabbit	WB	Hu, Mu
NB110-74824	autophagin-1	Polyclonal	Rabbit	IHC, WB	Hu, Mu
NB110-74830	autophagin-2	Polyclonal	Rabbit	IHC, WB	Hu, Mu
NB110-74809	autophagin-3	Polyclonal	Rabbit	IHC, WB	Hu, Mu, Rt
NB110-74826	autophagin-4	Polyclonal	Rabbit	IHC, WB	Hu, Mu
NB110-55552	Bcl-2 related protein A1/Bfl1 (EP517Y)	Monoclonal	Rabbit	FACS, IHC, WB, ICC	Hu, Mu, Rt(-)
NB500-482	CD63 (MEM-259)	Monoclonal	Mouse	FACS, IP, WB	Hu
NB100-863	DAPK 2	Polyclonal	Goat	WB	Mu
H00023604-M01	DAPK2 (3D4)	Monoclonal	Mouse	ELISA, WB	Hu
H0002002-A01	ELK1	Polyclonal	Mouse	ELISA, WB	Hu

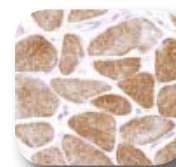
AKT Antibody NB600-608



IF microscopy using NB600-608 on cultured neonatal rat cardiomyocytes.

Species: Hu, Rt
Applications: ICC, IF, IHC, IP, WB

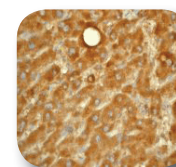
AMPK alpha 1 Antibody NB100-1727



Staining of FFPE sections of mouse heart using NB100-1727.

Species: Hu, Mu
Applications: IHC

ATG7 Antibody NB110-55474



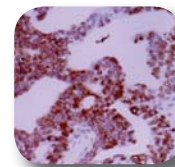
IHC analysis of paraffin-embedded human liver using NB110-55474.

Species: Hu, Mu
Applications: IHC, FACS, ICC, IP, WB

Other Autophagy Antibodies Cont'd. (more on web)

Catalog#	Product	Host	Type	Application	Species
NB300-508	FKBP 12	Polyclonal	Rabbit	IHC, IP, WB	Hu, Mu, Rt
R-143-100	GABARAP	Polyclonal	Rabbit	IHC, IF, WB	Hu, Rt
R-142-100	GABARAP L2	Polyclonal	Rabbit	IHC, IF, WB	Hu, Rt
NB600-755	Huntingtin (HDA3E10)	Monoclonal	Mouse	IF, IHC-Fr, IP, WB	Hu, Rt, Mu
NB100-58837	IRS1	Polyclonal	Rabbit	WB, IP	Hu, Mu
NB600-965	IRS1 [Ser307]	Polyclonal	Rabbit	WB	Mu
NB110-60930	LIPG	Polyclonal	Rabbit	WB	Hu, Mu
NB110-74807	MAP1LC3A	Polyclonal	Rabbit	IHC, WB	Hu, Mu, Rt
NB110-74806	MAP1LC3C	Polyclonal	Rabbit	IHC, WB	Hu
NB100-395	MDC1	Polyclonal	Rabbit	IF, WB	Hu
NB100-2340	MDC1	Polyclonal	Rabbit	WB, IP	Mu
NB500-139	MEK 1/2 [Ser218/222]	Polyclonal	Rabbit	WB	Hu, Mu, Rt, Xp
NB110-57190	MEK1 (E342)	Monoclonal	Rabbit	FACS, IHC, IP, WB, ICC	Hu, Mu, Rt
NSB460	MEK1 [Ser298]	Polyclonal	Rabbit	WB	Hu, Mu, Rt
NSB458	MEK1 [Thr292]	Polyclonal	Rabbit	WB	Hu, Mu, Rt
NSB462	MEK1 [Thr386]	Polyclonal	Rabbit	WB	Hu, Mu, Rt
NB110-57192	MEK2 (Y78)	Monoclonal	Rabbit	FACS, IHC, IP, WB, ICC	Hu, Mu(-), Rt
NSB466	MEK2 [Thr394]	Polyclonal	Rabbit	WB	Hu, Mu(-), Rt(-)
NSB468	MEK2 [Thr394]	Polyclonal	Rabbit	WB	Mu, Rt
NB110-57224	Mo25 (EP1680Y)	Monoclonal	Rabbit	FACS, IHC, IP, WB, ICC	Hu, Mu, Rt
NB100-241	mTOR	Polyclonal	Rabbit	WB	Hu, Mu, Rt
NB110-56996	mTOR/FRAP (Y391)	Monoclonal	Rabbit	FACS, IHC, IP, WB, ICC	Hu, Mu, Rt
NB100-616	p300 (RW105)	Monoclonal	Mouse	IF, IP, WB	Hu, Mu, Mk, Rt
NB100-293	p70S6	Polyclonal	Rabbit	WB	Rt
NB100-1748	PCNA	Polyclonal	Rabbit	IHC	Hu, Mu
NB500-106	PCNA (PC10)	Monoclonal	Mouse	IHC, IP, WB	Ch, Dr, Hu, Mu, Rt, Ye
NB600-820	PDK1	Polyclonal	Goat	ELISA, WB	Hu
NB110-57345	PDK1 (EP569Y) [Tyr373/Tyr376]	Monoclonal	Rabbit	IHC, WB	Hu, Mu, Rt(-)
NB110-57344	PDK1 (Y336)	Monoclonal	Rabbit	IHC, WB, ICC	Hu, Mu, Rt
NB600-736	PI 3 Kinase (U5)	Monoclonal	Mouse	IP, WB, IHC-Fr	Hu, Mu, Mk, Rt
NB110-60016	PI 3 Kinase p85 beta (T4)	Monoclonal	Mouse	IP, WB, IHC-Fr	Bv, Mk
NB200-559	PRAS40	Polyclonal	Rabbit	IF	Hu, Mu
NSB1100	PRAS40 [Thr246]	Polyclonal	Rabbit	WB	Hu, Mu
NB200-175	PTEN (28H6)	Monoclonal	Mouse	IHC	Hu
NB110-57441	PTEN (Y184)	Monoclonal	Rabbit	FACS, IHC, IP, WB, ICC	Hu, Mu, Rt
NB110-74845	RAB24	Polyclonal	Rabbit	IHC, WB	Hu, Rt, Mu
NB100-331	RAPTOR	Polyclonal	Rabbit	WB	Hu, Mu, Rt
NB100-56019	RAPTOR	Polyclonal	Rabbit	IF, WB, ICC	Mu
NB110-57455	RAPTOR (EP539Y)	Monoclonal	Rabbit	FACS, IHC, IP, WB, ICC	Hu, Mu(-), Rt(-)
NB110-74846	RGS19	Polyclonal	Rabbit	IHC, WB	Hu, Rt, Mu
NB100-1534	Rictor	Polyclonal	Goat	ELISA, WB, IHC-P	Hu
NB100-612	Rictor	Polyclonal	Rabbit	IP, WB	Hu, Mu
H00253260-M01	Rictor (1F3)	Monoclonal	Mouse	ELISA, IHC-P, WB	Hu
NB100-1104	S6K1	Polyclonal	Goat	WB	Hu
NB100-1545	S6K2	Polyclonal	Rabbit	WB, IP	Hu
NB100-57558	Sin1	Polyclonal	Rabbit	IHC	Hu, Mu
NB110-40424	Sin1	Polyclonal	Rabbit	IP, WB	Hu, Mu
NB110-74832	TM166	Polyclonal	Rabbit	IHC, WB	Hu, Mu, Rt
NB100-56008	TSC1	Polyclonal	Rabbit	WB	Hu, Mu, Rt
NB110-57070	TSC1/Hamartin (EP318Y)	Monoclonal	Rabbit	IHC, WB	Hu, Mu(-), Rt(-)
NB100-626	TSC2	Polyclonal	Rabbit	IP, WB	Hu
NB100-56009	TSC2	Polyclonal	Rabbit	WB	Hu, Mu
NB110-57632	TSC2/Tuberin (Y320)	Monoclonal	Rabbit	FACS, IHC, WB	Hu, Mu, Rt
NB110-74805	ubiquitin-binding protein p62	Rabbit	Rabbit	IHC, WB	Hu
NB110-74844	ULK1	Polyclonal	Rabbit	IHC, WB	Hu, Mu, Rt.
H00055823-M01	VPS11 (1H1)	Monoclonal	Mouse	ELISA, WB	Hu
H00057617-A01	VPS18	Polyclonal	Mouse	ELISA, WB	Hu
NB100-1386	VPS26	Polyclonal	Goat	WB	Hu
NB100-1399	VPS28	Polyclonal	Goat	WB, ELISA	Hu
NB100-1387	VPS29	Polyclonal	Goat	ELISA, WB	Hu
NB100-1388	VPS33A	Polyclonal	Goat	ELISA, WB	Hu
NB100-1397	VPS35	Polyclonal	Goat	ELISA, IHC, WB, IHC-P	Hu
H00027072-A01	VPS41	Polyclonal	Mouse	ELISA, WB	Hu
H00009525-A01	VPS4B	Polyclonal	Mouse	ELISA, WB	Hu
H00006944-M01	VPS72 (2G6)	Monoclonal	Mouse	ELISA, WB	Hu

APE1 Antibody NB100-101



IHC staining of APE1 in prostate cancer, using NB100-101.

Species: Hu, Mu, Rt
Applications: IHC, WB

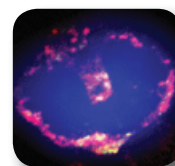
ATGL Antibody NB110-41536



Detection of ATGL in human adipose tissue lysate using NB110-41536.

Species: Hu, Mu
Applications: WB

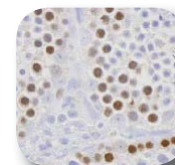
GABARAP L2 Antibody R-142-100



IF detected GABARAP L2 (GABARAPL2) in cytopsin-isolated human white blood cells using R-142-100.

Species: Hu, Rt
Applications: IF, IHC, WB

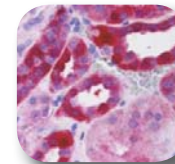
PCNA Antibody NB100-1748



Staining of FFPE sections of mouse testis using NB100-1748.

Species: Hu, Mu
Applications: IHC

Rictor Antibody NB100-1534



Staining of paraffin embedded human kidney using NB100-1534.

Species: Hu
Applications: ELISA, IHC-P, WB



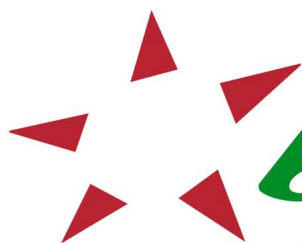
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12. [LC3 NB100-2331] Lee IH, Cao L, Mostoslavsky R, et al. A role for the NAD-dependent deacetylase Sirt1 in the regulation of autophagy. *PNAS.* March 4, 2008;105(9):3374-9.
13. [LC3 NB100-2331] Swerdlow, S., McColl, K., Rong, Y., et al. Apoptosis Inhibition by Bcl-2 Gives way to Autophagy in Glucocorticoid-Treated Lymphocytes. *Autophagy*. July 1, 2008; 4:5, 612-620.
14. [MDC1 NB100-395] Shi W, Ma Z, Willers H, et al. Disassembly of MDC1 Foci is controlled by ubiquitin-proteasome dependent degradation. *J Biol Chem* 2008:M801082200.
15. [Rictor NB100-612] Jindra, P. T., Y.-P. Jin, et al. 2008; HLA Class I Antibody-Mediated Endothelial Cell Proliferation via the mTOR Pathway. *J Immunol.* 180: 2357-2366.

Product Collaborations

Our goal at Novus Biologicals is to serve the research community by supplying products of high quality and applicability to current research trends and needs. If you have produced antibodies in the autophagy field that you are interested in licensing, please contact us to discuss how we can work together and with your Institution to bring your products to market.

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