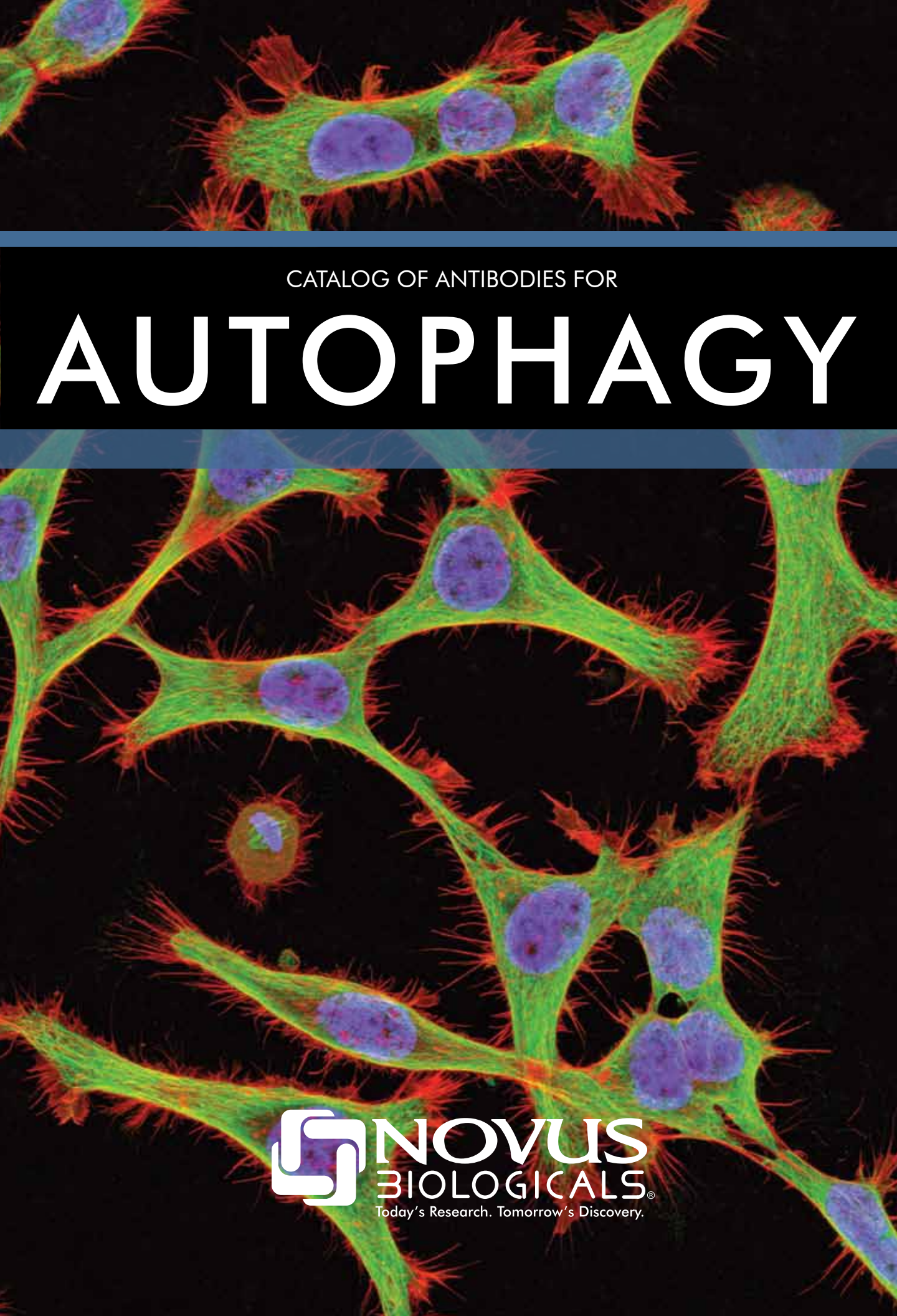


CATALOG OF ANTIBODIES FOR

AUTOPHAGY

NOVUS BIOLOGICALS®

Today's Research. Tomorrow's Discovery.

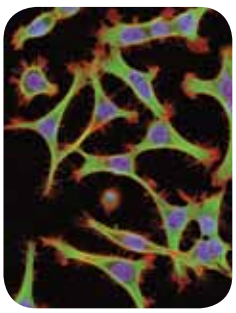
Table of Contents

Application Key

ChIP - Chromatin Immunoprecipitation
ELISA - Enzyme-linked immunosorbent assay
FACS - Fluorescent Activated Cell Sorting
ICC - Immunocytochemistry
IF - Immunofluorescence
IHC - Immunohistochemistry
IHC-Fr - Immunohistochemistry Frozen
IHC-P - Immunohistochemistry Paraffin
IP - Immunoprecipitation
PEP-ELISA - Peptide ELISA
WB - Western Blot

Reactivity Key

Av - Avian
Bv - Bovine
Ca - Canine
Ce - C. elegans
Ch - Chicken
Dr - Drosophila
Eq - Equine
Fe - Feline
Fi - Fish
Ft - Ferret
Ha - Hamster
Hu - Human
Ma - Mammal
Mk - Monkey
Mu - Mouse
Pl - Plant
Po - Porcine
Rb - Rabbit
Rt - Rat
Sh - Sheep
Xp - Xenopus
Ye - Yeast
Ze - Zebrafish



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).

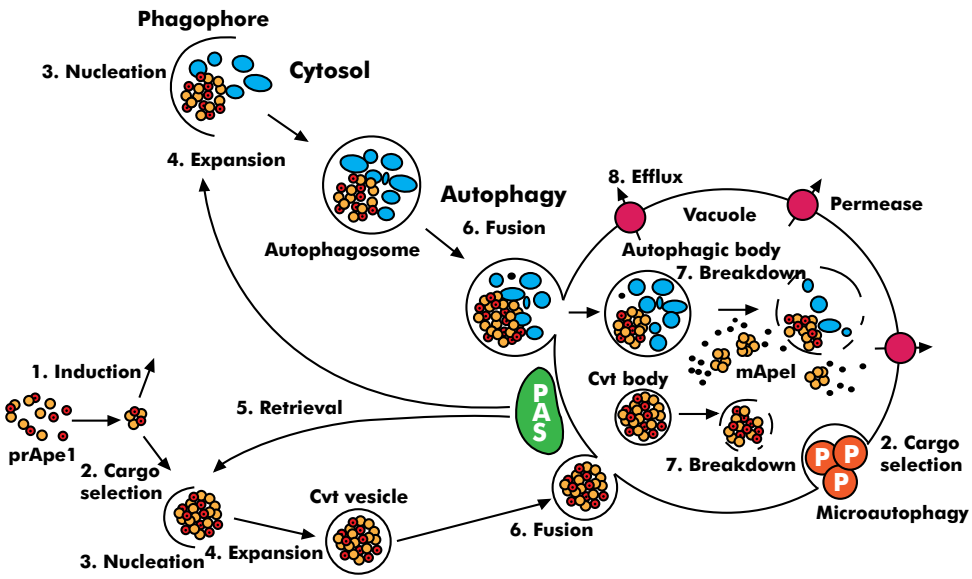
Autophagy Research

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. 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.

Autophagy Cvt Pathway



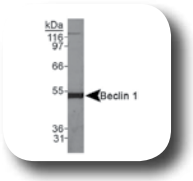
Cancer and Autophagy

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 a marked increase in 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.

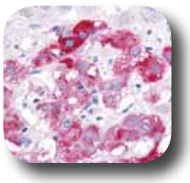
Beclin 1 Antibody
NB110-87318



Western blot analysis of Beclin 1 in HeLa whole cell lysate using NB110-87318.

Species: Bv, Ch, Hu, Mk, Mu, Po, Rt, Xp
Applications: IHC-P, WB

Beclin 1 Antibody
NB500-249



Immuno-histochemical analysis of pheo-chromocytes of the adrenal medulla using NB500-249.

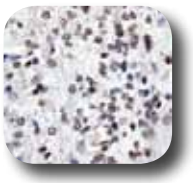
Species: Hu, Mu
Applications: IF, IHC-P, IP, WB

Beclin 1 Antibody
NB500-266

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

Species: Hu, Mu
Applications: WB

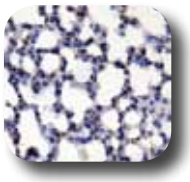
Beclin 1 (1B7) Antibody
NBP1-00084



Immuno-histochemical analysis of of Beclin 1 in mouse brain using NBP1-00084.

Species: Bv, Ch, Eq, Hu, Mk, Mu, Po, Rt
Applications: IHC-P, WB

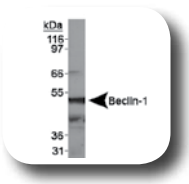
Beclin 1 (4H10) Antibody
NBP1-00085



Immuno-histochemical analysis of Beclin 1 in mouse lung using NBP1-00085.

Species: Bv, Ch, Eq, Hu, Mk, Mu, Po, Rt
Applications: IHC-P, WB

Beclin 1 (9B6) Antibody
NBP1-00088



Western blot analysis on HeLa whole cell extract using NBP1-00088.

Species: Bv, Ch, Eq, Hu, Mk, Mu, Po, Rt
Applications: IHC, WB

Can't Decide? Try a Beclin 1 Antibody Pack:

NB910-95610 • Includes 3 vials of anti-Beclin 1 antibodies (NB500-249, NB500-266, NB110-87318)
NB910-95609 • Includes 3 sample sized vials of anti-Beclin 1 antibodies (NB500-249SS, NB500-266SS, NB110-87318SS)

Beclin 2

Beclin 2 is a novel coiled-coil protein related to the autophagic Beclin 1 protein. Its is thought to interact with Bcl-2, an anti-apoptotic protein and is believed to function in autophagy.

Beclin 2 Antibody
NB110-60984

Western blot analysis of human Beclin 2 in MCC827 lysate using NB110-60984.

Species: Hu
Applications: WB

Beclin 2 Antibody
NB110-60982

Western blot analysis of human Beclin 2 in HEK293 lysate using NB110-60982.

Species: Hu
Applications: WB

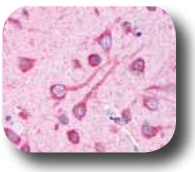
These Beclin 2 antibodies are also available conjugated to:

- HRP
- Biotin
- DyLight 488
- DyLight 549
- DyLight 649

LC3

LC3 is a ubiquitin-like modifier protein and a mammalian homologue of the yeast autophagy protein Atg8. It was originally identified as microtubule-associated protein 1 light chain 3 (MAPLC3). LC3 is a component of both the MAP1A and MAP1B microtubule-binding domains. Map1 microtubule-binding activity during cellular development may be effected by the regulated expression of heavy chain independent LC3. LC3 is expressed as three splice variants (LC3A, LC3B and LC3C). Each of these splice variants exhibit different tissue distributions and are processed into two different post-translationally modified forms, LC3-I and LC3-II. LC3-I is found in the cytosol while LC3-II localizes to autophagasome membranes and is enriched in the autophagic vacuole fraction. LC3-II is the first mammalian protein identified that specifically associates with the autophagosome membranes. 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.

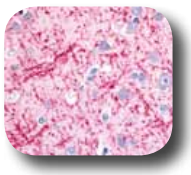
LC3 Antibody
NB100-2220



Immuno-histochemical analysis of cerebral cortex neurons using NB100-2220.

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

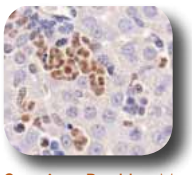
LC3 Antibody
NB100-2331



Immuno-histochemical analysis of cerebral cortex cell processes in gray matter using NB100-2331

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

LC3 Antibody
NBP1-19167



Immuno-histochemical analysis of LC3 in mouse liver using NBP1-19167.

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

LC3B Antibody
NB600-1384

Immuno-cytochemical analysis of treated U373-MG (human glioblastoma) cells using NB600-1384.

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

LC3B Antibody
R-155-100

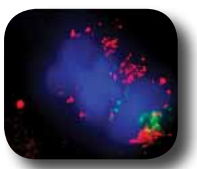
Western blot analysis under reduceding condition on Olfactory cell line (Odora) lysate using R-155-100.

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

These LC3 antibodies are also available conjugated to:

- HRP
- Biotin
- DyLight 488
- DyLight 549
- DyLight 649

LC3C Antibody
R-140-100



Immuno-fluorescent analysis of in cytospin-isolated human white blood cells using R-140-100.

Species: Hu
Applications: IF, IHC, WB

LC3C Antibody
H00440738-B01

Western blot analysis of transfected 293T cell line using H00440738-B01.

Species: Hu
Applications: ELISA, WB

Can't Decide?
Try a LC3 Antibody Pack:

- NB910-40752
  LC3/LC3B Antibody Pack
- NB910-40435
  LC3 Antibody Pack

ATG9

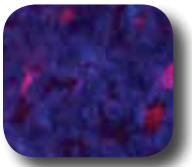
ATG9 is the only integral membrane protein required for autophagosome formation and considered a membrane carrier in autophagy-related pathways. It is regulated via Atg1 and is found migrating between mitochondria and the pre-autophagosomal structure.

ATG9A Antibody
NB110-56893

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

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

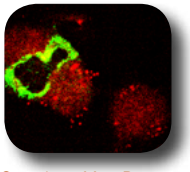
ATG9A Antibody
R-160-100



Immuno-fluorescent analysis of mouse lymph node using R-160-100

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

ATG9B Antibody
R-144-100

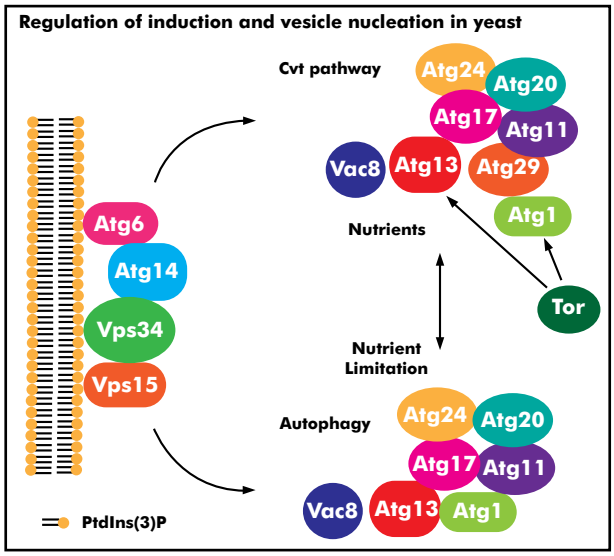


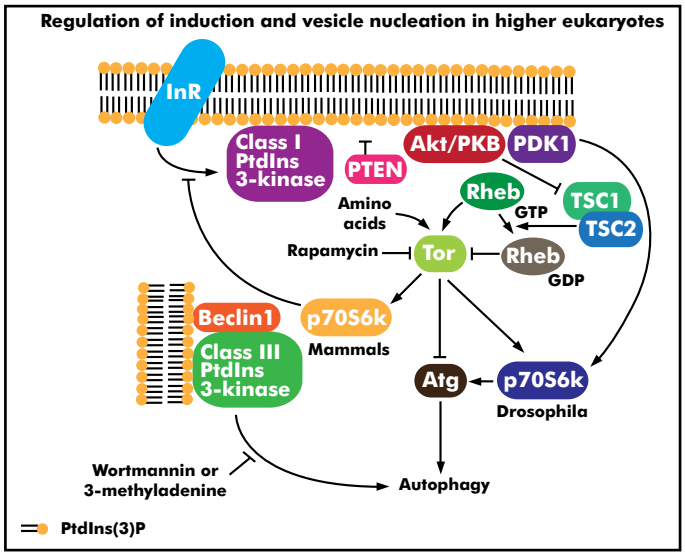
Immuno-fluorescent analysis of APG9 L2 in cytospin-isolated human white blood cells using R-144-100.

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

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.

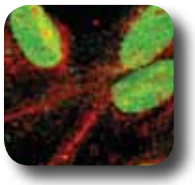




mTOR

mTOR (mammalian Target of Rapamycin) activates p70S6k, thereby inducing autophagy in response to a stress signal such as nutrient depletion. mTOR can inhibit progression through the G1 cell cycle phase by interfering with mitogenic signaling pathways.

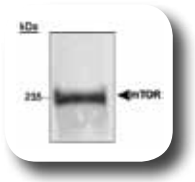
mTOR Antibody
NB100-240



Immunofluorescent analysis of mTor (red), in L6 myotubes using NB100-240.

Species: Hu, Rt
Applications: ICC, IP

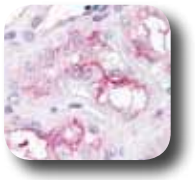
mTOR Antibody
NB100-241



Western blot analysis of mTOR in rat liver using NB100-241.

Species: Hu, Mu, Rt
Applications: WB

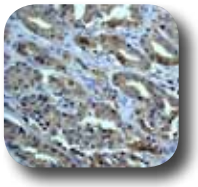
mTOR [phospho Ser2448] Antibody
NB600-607



Immuno-histochemical analysis of human kidney using NB600-607.

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

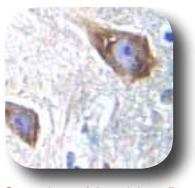
mTOR (Y391) Antibody
NB110-56996



Immuno-histochemical analysis of human prostate carcinoma using NB110-56996.

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

mTOR Antibody
NBP1-20025



Immuno-histochemical analysis of human brain tissue using NBP1-20025.

Species: Hu, Mu, Rt
Applications: IHC

mTOR Support Products

- NBL1-10829 - mTor Lysate
- H00002475-Q01 - mTOR Partial Recombinant Protein

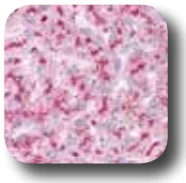
Can't Decide? Try a mTOR Antibody Pack:

- NB100-932 - Includes 2 vials of anti-mTOR antibodies (NB100-240 and NB100-241)

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.

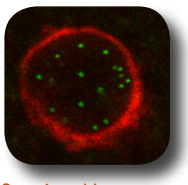
ATG5 Antibody
NB110-53818



Immuno-histochemical analysis of liver hepatocytes using NB110-53818.

Species: Bv, Hu, Mk, Mu, Po, Rt, Xp, Ze
Applications: IF, IHC, WB

ATG5 Antibody
R-111-100



Immuno-fluorecent analysis of human brain using R-111-100. ATG5 appears green.

Species: Hu
Applications: IF, IHC, WB

ATG5 Antibody
NB300-368

Western blot analysis of ATG5 on recombinant protein using NB300-368.

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

ATG12

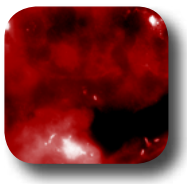
The delivery of cytoplasmic components to the lysosome for degradation requires a ubiquitin-like protein conjugation system, in which ATG12 is covalently bound to ATG12-ATG5 and Apg16.

ATG12 Antibody
H00009140-B01

Western blot analysis of ATG12 expression in transfected 293T cell line using H00009140-B01.

Species: Hu
Applications: ELISA, WB

ATG12 Antibody
R-112-100



Immuno-fluorescent analysis of APG12 in rat testis using R-112-100.

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

ATG12 Antibody
NB600-603

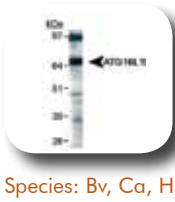
Western blot analysis of APG12 fusion protein using NB600-603.

Species: Ye
Applications: ELISA, 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. As the membrane elongates, the increased concentration of the complex builds on the outer side of the isolation membrane. Upon complete formation of the autophagosome, the APG12-APG5-APG16L dissociates from the membrane.

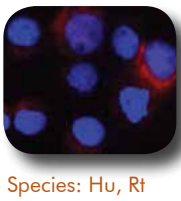
APG16 Antibody
NB110-60928



Western blot analysis of ATG16L1 in HeLa whole cell extracts using NB110-60928.

Species: Bv, Ca, Hu, Mk, Mu, Rt
Applications: WB

APG16 Antibody
R-158-100



Immuno-flourescent analysis of APG16L1 in HL60 cells using R-158-100.

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

APG16 Antibody
NB110-82384

Western blot analysis of ATG16L1 in NIH/3T3 whole cell lysates using NB110-82384.

Species: Hu, Mu
Applications: WB

Calreticulin

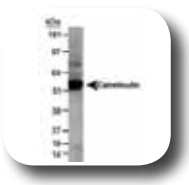
Calreticulin mediates the clearance of dead cells by signaling phagocytes for cell consumption. It is highly expressed in phagocytic and dying cells, and may therefore function as a marker for these types of cells.

Calreticulin Antibody
NB600-101

Immuno-fluorescent analysis of Calreticulin in HCT15 colon cancer cells using NB600-101.

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

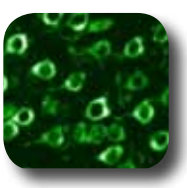
Calreticulin Antibody
NB600-103



Western blot analysis of Calreticulin in human kidney lysate using NB600-103.

Species: Hu
Applications: WB

Calreticulin Antibody
NB300-545



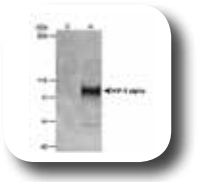
Immuno-fluorescent analysis of Calreticulin in rat brain cortex using NB300-545.

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

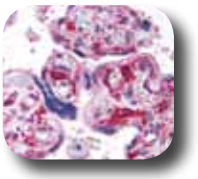
HIF-1 alpha (H1alpha67) Antibody
NB100-105



Western blot analysis of HIF-1 alpha in cobalt chloride induced COS-7 nuclear extracts using NB100-105.

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

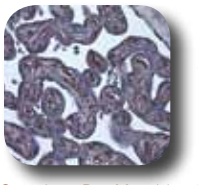
HIF-1 alpha Antibody
NB100-479



Immuno-histochemical analysis of placenta villi using NB100-479.

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

HIF-1 alpha (ESEE122) Antibody
NB100-131



Immuno-histochemical analysis of human placenta using NB100-131.

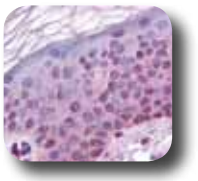
Species: Bv, Hu, Mu, Rt
Applications: ICC, IF, IHC-Fr, IHC-P, IP

HIF-1 beta (H1beta234) Antibody
NB100-124

Immuno-histochemical analysis of human glioblastoma multi-forme using NB100-124.

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

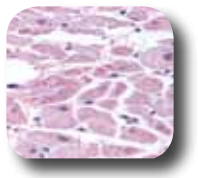
HIF-1 beta Antibody
NB100-110



Immuno-histochemical analysis of skin epidermis using NB100-110.

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

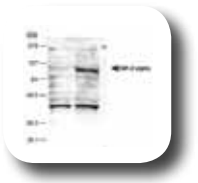
HIF-2 alpha Antibody
NB100-122



Immuno-histochemical analysis of human cardiac myocytes using NB100-122.

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

HIF-2 alpha (ep190b) Antibody
NB100-132



Western blot analysis of HIF-2 alpha using NB100-132. Lane1: normoxic A549 lysate control, lane 2: hypoxic A549 lysate.

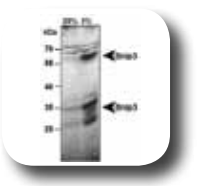
Species: Hu, Mu, Rt
Applications: FACS, IHC-P, WB

HIF-3 alpha Antibody
NB100-2529

Western blot analysis of HIF-3 alpha using NB100-2529. Lane 1: Cos7(-) control. Lane 2: Cos7-CoC12(+) control.

Species: Hu, Mu
Applications: IP, WB

BNIP3 Antibody
NB110-60562



Western blot analysis of BNIP3 in hypoxic Hep3b lysate using NB110-60562.

Species: Hu, Fe
Applications: WB

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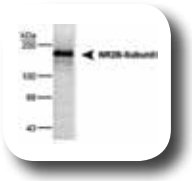
Neurodegeneration and Autophagy

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.

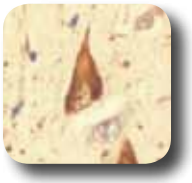
NMDA receptor 2B Antibody
NB300-106



Western blot analysis of NR2B in rat hippocampus using NB300-106.

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

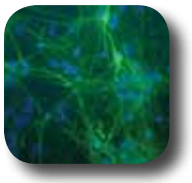
Ubiquitin (Ubi-1) Antibody
NB300-130



Immuno-histochemical analysis of Ubiquitin in hippocampal tissue from an Alzheimer patient using NB300-130.

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

Neurofilament Light Chain (DA2) Antibody
NB300-132



Immuno-histochemical analysis of cultured neurons (green) using NB300-132. Nuclei are stained blue.

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

Neurofilament Heavy Chain Antibody
NB300-135

Immuno-fluorescent analysis of rat spinal cord stained using NB300-135 (green) and NB110-58869 (red).

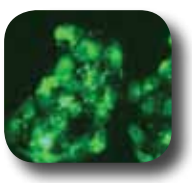
Species:Hu, Ma, Mu, Mk, Rt
Applications: IF, IHC-Fr, IHC-P, WB

Neurofilament Medium Chain Antibody
NB300-133

Western blot analysis of NF-M in rat cerebellum using NB300-133.

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

ApoE (EP1374Y) Antibody
NB110-55466



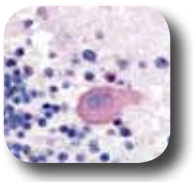
Immuno-fluorescent analysis of HEP G2 cells using NB110-55466.

Species: Hu, Rt
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



Immuno-histochemical analysis of Huntingtin in human brain cerebellum using NB600-646.

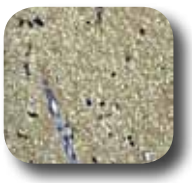
Species: Hu, Po
Applications: ELISA, IHC-P, WB

Huntingtin (HDC8A4) Antibody
NB600-1198

Western blot analysis of Huntingtin in normal human cerebral cortex using NB600-1198.

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

Huntingtin (EP867Y) Antibody
NB110-57069



Immuno-histochemical analysis of human brain tissue using NB110-57069.

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

HAP1 (1B6) Antibody
NB110-74569

Immuno-histochemical analysis of rat hypothalamus using NB110-74569.

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

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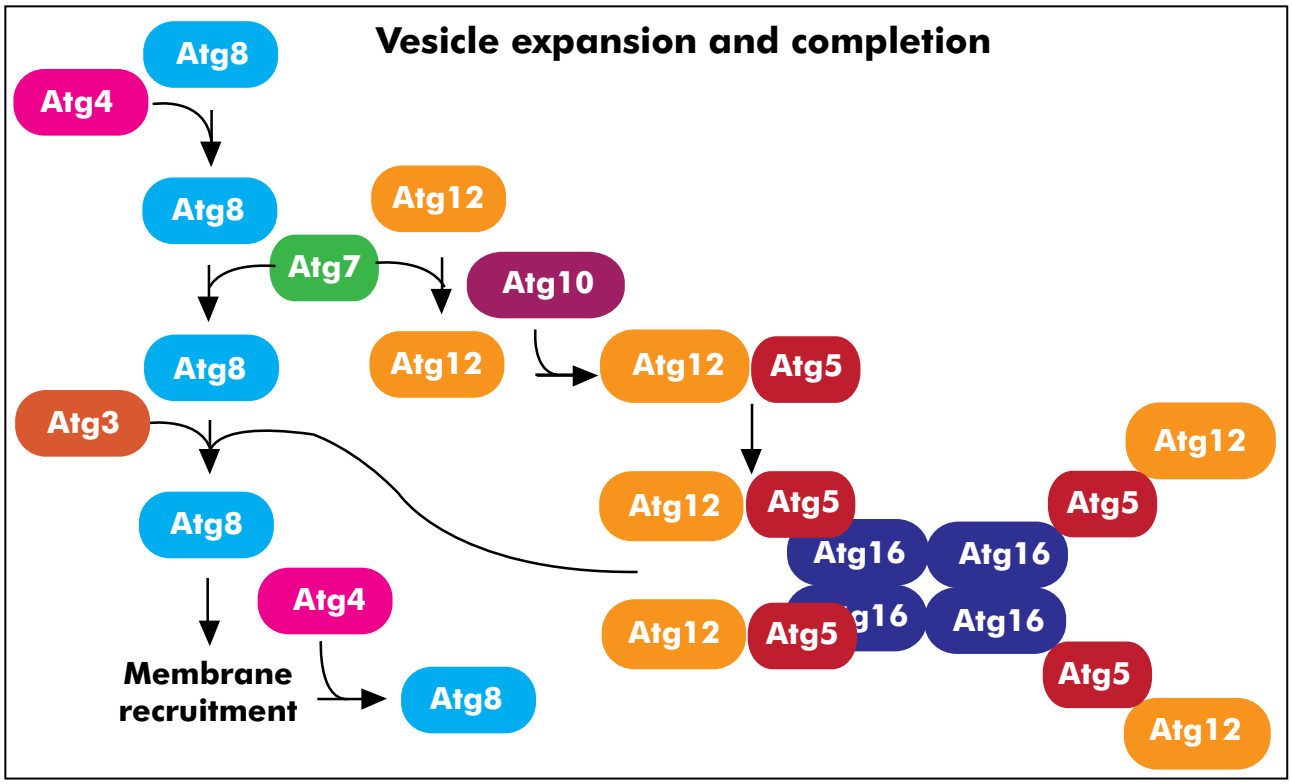
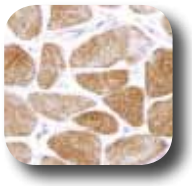


Additional Autophagy Antibodies

Browse more at www.novusbio.com

Catalog#	Product	Host	Type	Application	Species
NB600-467	AKT1	Rabbit	Polyclonal	ELISA, IF, IHC-P, WB	Hu
NB600-590	AKT1 [phospho Ser473]	Rabbit	Polyclonal	ELISA, ICC, IF, IHC-P, WB	Hu
NB600-593	AKT1 [phospho Thr308]	Rabbit	Polyclonal	ELISA, WB	Hu
NB100-59849	PRAS40	Rabbit	Polyclonal	IP, WB	Hu
NBP1-20098	AMBRA1	Rabbit	Polyclonal	IHC, WB	Hu, Mu, Rt
NB100-1727	AMPK alpha 1	Rabbit	Polyclonal	IHC	Hu, Mu
NB100-239	AMPK alpha 1	Rabbit	Polyclonal	IP, WB	Bv, Hu, Rt
NB100-238	AMPK alpha 2	Rabbit	Polyclonal	IP, WB	Bv, Hu, Rt
NB100-101	APE1	Rabbit	Polyclonal	IHC, IP, WB	Hu, Mu, Rt
NB100-116	APE1 (13B8E5C2)	Mouse	Monoclonal	IHC-Fr, IP, WB	Hu, Mu, Rt
NB100-909	APE1 Antibody Pack	varies	varies	varies	varies
R-159-100	Apg3	Rabbit	Polyclonal	IF, IHC, WB	Hu, Rt
NBP1-00154	ARSA	Goat	Polyclonal	ELISA, WB	Hu, Mu, Rt
NBP1-06021	ARSB	Goat	Polyclonal	ELISA, IHC-P, WB	Hu
R-145-100	ATG10	Rabbit	Polyclonal	IHC, IF	Hu
R-112-100	ATG12	Rabbit	Polyclonal	IHC, IF, WB	Hu, Rt
NB110-74837	apg16	Rabbit	Polyclonal	IHC, WB	Hu
NB110-74831	ATG4A	Sheep	Polyclonal	IHC, WB	Hu, Mu
R-157-100	ATG4B	Rabbit	Polyclonal	IF, IHC, WB	Hu, Rt
R-156-100	ATG4C	Rabbit	Polyclonal	IF, IHC, WB	Hu, Rt
NB110-74828	ATG4D	Sheep	Polyclonal	IHC, WB	Hu, Mu
NB110-53818	ATG5	Rabbit	Polyclonal	IF, IHC, WB	Bv, Hu, Mk, Mu, Po, Rt, Xp, Ze
H00009474-M08	ATG5 (4B2)	Mouse	Monoclonal	ELISA, WB	Hu
NB110-55474	ATG7 (EP1759Y)	Rabbit	Monoclonal	FACS, IHC, IP, WB, ICC	Hu
NB600-471	ATG8	Rabbit	Polyclonal	ELISA, WB	Ye
R-160-100	ATG9A	Rabbit	Polyclonal	IHC, IF, WB	Hu, Rt
NB110-74834	ATG9B	Rabbit	Polyclonal	IHC, WB	Hu
NB110-74836	ATG9B	Rabbit	Polyclonal	IHC, WB	Mu
NB110-41536	Adipose Triglyceride Lipase	Rabbit	Polyclonal	WB	Hu, Mu
NB110-55552	Bcl2A1 (EP517Y)	Rabbit	Monoclonal	FACS, ICC, IHC, WB	Hu, Mu
NB110-57224	CAB39 (EP1680Y)	Rabbit	Monoclonal	FACS, ICC, IHC, IP, WB	Hu, Mu, Rt
NB500-482	CD63 (MEM-259)	Mouse	Monoclonal	FACS, IP, WB	Hu
NB300-1022	DAP Kinase 2	Rabbit	Polyclonal	WB	Hu, Mu, Rt
NB110-56926	DAP Kinase 2 (EP1633Y)	Rabbit	Monoclonal	FACS, IHC, WB	Hu, Mu, Rt
NB110-85526	DRAM	Rabbit	Polyclonal	ELISA, IF, WB	Hu, Mu, Rt

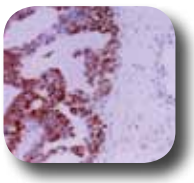
AMPK alpha 1 Antibody
NB100-1727



Immuno-histochemical analysis of human and mouse AMPK alpha 1 using NB100-1727.

Species: Hu, Mu
Applications: IHC

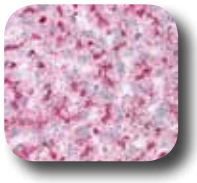
APE1 Antibody
NB100-101



Immuno-histochemical analysis of APE-1 in prostate cancer using NB100-101.

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

ATG5 Antibody
NB110-53818



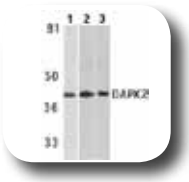
Immuno-histochemical analysis of hepatocytes using NB110-53818.

Species: Bv, Hu, Mk, Mu, Po, Rt, Xp, Ze
Applications: IF, IHC, WB

Additional Autophagy Antibodies Cont'd

Catalog#	Product	Host	Type	Application	Species
NB100-98697	DRAM	Rabbit	Polyclonal	IHC, WB	Mu
NB500-137	ELK1	Rabbit	Polyclonal	IF, IHC, WB	Hu, Mu, Rt
NB110-60930	Endothelial Lipase	Rabbit	Polyclonal	WB	Hu, Mu
NB300-508	FKBP12	Rabbit	Polyclonal	IHC, IP, WB	Hu, Mu, Rt
R-142-100	GABARAPL2	Rabbit	Polyclonal	IF, IHC, WB	Hu, Rt
NBP1-03351	IRS1	Rabbit	Polyclonal	IHC-P	Hu
NB110-82353	LAMP1	Rabbit	Polyclonal	IF, IHC-P, WB	Hu, Mu, Rt
NBP1-28210	LAMP1 (1D4B)	Rat	Monoclonal	FACS, IHC-Fr, IP, WB	Mu
NB100-395	MDC1	Rabbit	Polyclonal	IF, WB	Hu
NB100-2340	MDC1	Rabbit	Polyclonal	WB, IP	Mu
NB500-139	MEK1/2 [phospho Ser218/Ser222]	Rabbit	Polyclonal	WB	Hu, Mu, Rt, Xp, Ze, Bv, Ca, Ch, Mk
NB500-144	MEK1 [phospho Thr386]	Rabbit	Polyclonal	WB	Hu
NB110-57190	MEK1 (E342)	Rabbit	Monoclonal	FACS, ICC, IHC, IP, WB	Hu, Mu, Rt
NBP1-21381	MEK2	Rabbit	Polyclonal	IP, WB	Hu
NB110-57192	MEK2 (Y78)	Rabbit	Monoclonal	FACS, ICC, IHC, IP, WB	Hu, Rt
NB100-82040	MEK2 [phospho Thr394]	Rabbit	Polyclonal	IHC, WB	Hu, Mu, Rt
NB100-616	KAT3B / p300 (RW105)	Mouse	Monoclonal	IF, IP, WB	Hu, Mu, Mk, Rt
NBP1-02427	PCNA	Rabbit	Polyclonal	ELISA, IHC-P, WB	Bv, Ca, Ch, Fi, Hu, Mk, Mu, Rt, Xp
NB100-456	PCNA	Rabbit	Polyclonal	IP, WB	Hu
NB500-106	PCNA (PC10)	Mouse	Monoclonal	IHC-Fr, IP, WB	Ch, Dr, Hu, Mu, Rt, Ye
NB100-2383	PDK1	Rabbit	Polyclonal	WB	Hu
NB100-82137	PDK1 [phospho Ser241]	Rabbit	Polyclonal	IHC, WB	Hu, Mu, Rt
NB110-57344	PDK1 (Y336)	Rabbit	Monoclonal	IHC, WB, ICC	Hu, Mu, Rt
NB600-736	PI 3 Kinase p85 alpha (U5)	Mouse	Monoclonal	IHC-Fr, IP, WB	Bv, Hu, Mk, Mu, Rt
NB110-60016	PI 3 Kinase p85 beta (T4)	Mouse	Monoclonal	IHC-Fr, IP, WB	Bv, Mk
NB100-59849	PRAS40	Rabbit	Polyclonal	IP, WB	Hu
NB300-749	Presenilin 1 (APS 11)	Mouse	Monoclonal	ELISA, IF, IHC, WB	Hu, Mu, Rt
NB110-57435	Presenilin 2 (EP1515Y)	Rabbit	Monoclonal	ICC, IHC, IP, WB	Hu, Mu, Rt
NBP1-03352	PTEN	Rabbit	Polyclonal	IHC-P	Hu
NB100-92616	PTEN [phospho Ser370]	Rabbit	Polyclonal	ELISA, IHC, WB	Hu, Mu, Rt
NB110-57441	PTEN (Y184)	Rabbit	Monoclonal	FACS, ICC, IHC, IP, WB	Hu, Mu, Rt
NB110-74845	Rab24	Rabbit	Polyclonal	IHC, WB	Hu, Mu, Rt
NB100-331	Raptor	Rabbit	Polyclonal	IP, WB	Hu, Mu, Rt
NB110-57455	RAPTOR (EP539Y)	Rabbit	Monoclonal	FACS, IHC, IP, WB, ICC	Hu
NB100-766	Raptor	Rabbit	Polyclonal	FACS, IP	Hu, Mu
NB110-74846	RGS19	Rabbit	Polyclonal	IHC, WB	Hu, Mu, Rt
NBP1-28669	RICTOR	Rabbit	Polyclonal	IHC	Hu
NB100-612	RICTOR	Rabbit	Polyclonal	FACS, IP, WB	Hu, Mu
H00253260-M01	RICTOR (1F3)	Mouse	Monoclonal	ELISA, IHC-P, WB	Hu
NB100-934	RICTOR Antibody Pack	varies	varies	varies	varies
NB110-57310	S6K (E343) [phospho Ser6]	Rabbit	Monoclonal	FACS, IHC, IP, WB	Hu, Mu, Rt
NB100-293	S6K	Rabbit	Polyclonal	WB	Rt
NB100-1545	S6K2	Rabbit	Polyclonal	IP, WB	Hu
NB100-57558	SIN1	Rabbit	Polyclonal	IHC	Hu, Mu
NB110-40424	SIN1	Rabbit	Polyclonal	IP, WB	Hu, Mu
NB110-74792	TMEM166	Sheep	Polyclonal	IHC, WB	Hu, Mu, Rt
NB100-2315	TSC1	Rabbit	Polyclonal	IP, WB	Hu, Mu
NB110-57070	TSC1 (EP318Y)	Rabbit	Monoclonal	IHC, WB	Hu
NB100-626	TSC2	Rabbit	Polyclonal	IP, WB	Hu
NB100-92235	TSC2	Rabbit	Polyclonal	ELISA, IF, IHC, WB	Hu, Mu, Rt
NB110-57632	TSC2 (Y320)	Rabbit	Monoclonal	FACS, IHC, WB	Hu, Mu, Rt
NB110-74805	Sequestosome 1	Rabbit	Polyclonal	IHC-Fr, IHC-P, WB	Hu
NB110-61678	Sequestosome 1	Sheep	Polyclonal	IHC, WB	Hu
NB110-74844	ULK1	Rabbit	Polyclonal	IHC, WB	Hu, Mu, Rt
H00055823-M01	VPS11 (1H1)	Mouse	Monoclonal	ELISA, WB	Hu
H00057617-A01	VPS18	Mouse	Polyclonal	ELISA, WB	Hu
NB100-1386	VPS26	Goat	Polyclonal	PEP-ELISA, WB	Hu
NB100-1399	VPS28	Goat	Polyclonal	PEP-ELISA, IHC-P, WB	Hu
NB100-1387	VPS29	Goat	Polyclonal	PEP-ELISA, WB	Hu, Mu, Rt
NB100-1397	VPS35	Goat	Polyclonal	ELISA, IHC, WB, IHC-P	Hu
H00027072-A01	VPS41	Mouse	Polyclonal	ELISA, WB	Hu
H00009525-A01	VPS4B	Mouse	Polyclonal	ELISA, WB	Hu
H00006944-M01	VPS72 (2G6)	Mouse	Monoclonal	ELISA, IF, WB	Hu
H00055062-M02	WIPI1 (3C1)	Mouse	Monoclonal	ELISA, WB	Hu

DAP Kinase 2 Antibody
NB300-1022



Western blot analysis in A431(Lane 1) mouse spleen (Lane 2) rat kidney (Lane 3).

Species: Hu, Mu, Rt
Applications: WB

ATGL Antibody
NBP1-03351

Immunohistochemical analysis of human breast carcinoma using NBP1-03351.

Species: Hu
Applications: IHC-P

KAT3B/p300 (RW105) Antibody
NB100-616

Western blot analysis of p300 detected in nuclear extract using NB100-616.

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

PCNA (PC10) Antibody
NB500-106

Immunohistochemical analysis of human colon carcinoma using NB500-106.

Species: Ch, Dr, Hu, Mu, Rt, Ye
Applications: IHC-Fr, IP, WB

PDK1 Antibody
NB100-2383

Western blot analysis of PDK1 in human heart lysate using NB100-2383.

Species: Hu
Applications: WB

IN THE NEWS

1. [ATG5 NB110-53818] Lee J-A, Gao F-B. Inhibition of autophagy induction delays neuronal cell loss caused by dysfunctional ESCRT-III in frontotemporal dementia. J Neurosci 2009;29(26):8506-8511. [PMID: 19571141]

2. [Beclin 1 NB110-87318] Bellot G, et al. Hypoxia-induced autophagy is mediated through hypoxia-inducible factor induction of BNIP3 and BNIP3L via their BH3 domains. Mol Cell Biol 2009;29(10):2570-2581. [PMID: 19273585]

3. [Beclin 1 NB500-249] [Beclin 1 NB110-87318] Pattingre S, et al. Role of JNK1-dependent Bcl-2 phosphorylation in ceramide-induced macroautophagy. J Biol Chem 2009;284(5):2719-2728. [PMID: 19029119]

4. [Beclin 1 NB500-249] Wang Y et al. Loss of macroautophagy promotes or prevents fibroblast apoptosis depending on the death stimulus. J Biol Chem. 2008 Feb 22;283(8):4766-77. [PMID: 18073215]

5. [Calreticulin NB600-101] Baruah P, et al. C1q enhances IFN-gamma production by antigen-specific T cells via the CD40 costimulatory pathway on dendritic cells. Blood 2009;113(15):3485-3493. [PMID: 19171874]

6. [LC3 NB100-2220] Dreux M, Gastaminza P, Wiel SF, et al. The autophagy machinery is required to initiate hepatitis C virus replication. PNAS 2009;106(33):14046-14051. [PMID: 19666601]

7. [LC3 NB100-2220] Fu L, et al. Perifosine inhibits mammalian target of rapamycin signaling through facilitating degradation of major components in the mTOR axis and induces autophagy. Cancer Res. 2009 Dec 1;69(23):8967-76. [PMID: 19920197]

8. [LC3 NB100-2220] Pacheco CD, Elrick MJ, Lieberman AP. Tau deletion exacerbates the phenotype of Niemann-Pick type C mice implicates autophagy in pathogenesis. Hum Mol Genet 2009;18(5):956-965. [PMID: 19074461]

9. [LC3 NB100-2220] Shen S, et al. Cyclodepsipeptide toxin promotes the degradation of Hsp90 client proteins through chaperone-mediated autophagy. J Cell Biol 2009;185(4):629-639. [PMID: 19433452]

10. [LC3 NB100-2220] Young JE, Martinez RA, La Spada AR. Nutrient deprivation induces neuronal autophagy and implicates reduced insulin signaling in neuroprotective autophagy activation. J Biol Chem 2009;284(4):2363-2373. [PMID: 19017649]

11. [LC3 NB100-2331] Lee IH, Finkel T. Regulation of autophagy by the p300 acetyltransferase. J Biol Chem 2009;284(10):6322-6328. [PMID: 19124466]

12. [LC3B NB600-1384] Montie HL, et al. Cytoplasmic retention of polyglutamine-exped rogen receptor ameliorates disease via autophagy in a mouse model of spinal bulbar muscular atrophy. Hum Mol Genet 2009;18(11):1937-1950. [PMID: 19279159]

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This antibody was given a review of five out of five stars, in a customer review submitted September 8, 2009. The researcher used the antibody in Western Blot on human brain extract within the suggested dilution and achieved a specific band at 90 kDa. The customer stated "I was very happy to use the product and another one for LC3 from your company and would gladly recommend it for anyone interested."

- Reviewed by Panaiyur S. Mohan, Ph.D.

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