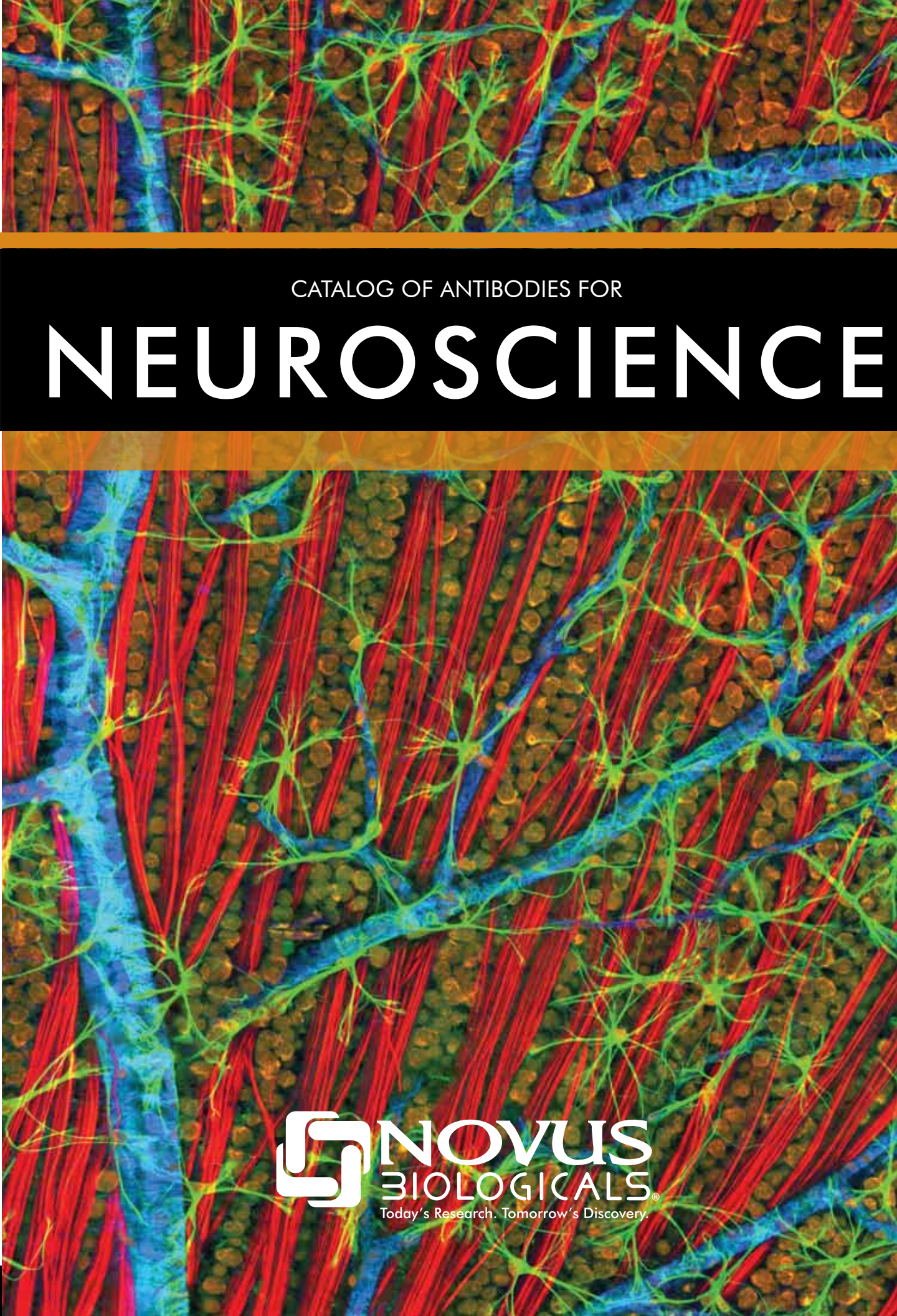


CATALOG OF ANTIBODIES FOR

NEUROSCIENCE

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
RNAi - RNAi Validation
WB - Western Blot

Reactivity Key

Av - Avian
Bv - Bovine
Ca - Canine
Ch - Chicken
Eq - Equine
Fe - Feline
Gp - Guinea Pig
Ha - Hamster
Hu - Human
Ma - Mammal
Mk - Monkey
Mu - Mouse
Po - Porcine
Rb - Rabbit
Rt - Rat
Sh - Sheep
Xp - Xenopus
Ze - Zebra Fish

About the Cover Image

Fluorescence image of mouse retina stained with GFAP in glial cells (green), f-actin in endothelial cells (blue), neurofilament 68kDa in optic nerve axons (red), and DNA/RNA in cell nuclei and cytoplasm (orange).

Neuroscience Research

Explained at the most fundamental level, neuroscience research is the study of the nervous system. This complex field consists of many interdisciplinary relationships between areas, such as biochemistry, psychology and pathology. Molecular neuroscience studies the mechanisms by which neurons conduct and respond to electrical stimuli, whereas systems neuroscience examines neuronal circuits and physiological responses.

Neurodegeneration is an overarching term used to describe the progressive loss of the structure and/or function of neurons. Many widely studied conditions, such as Parkinson's Disease, Alzheimer's Disease, Huntington's Disease and Amyotrophic Lateral Sclerosis, occur as a result of the neurodegenerative process. Parallels between these conditions include atypical protein assemblage and induction of cell death.

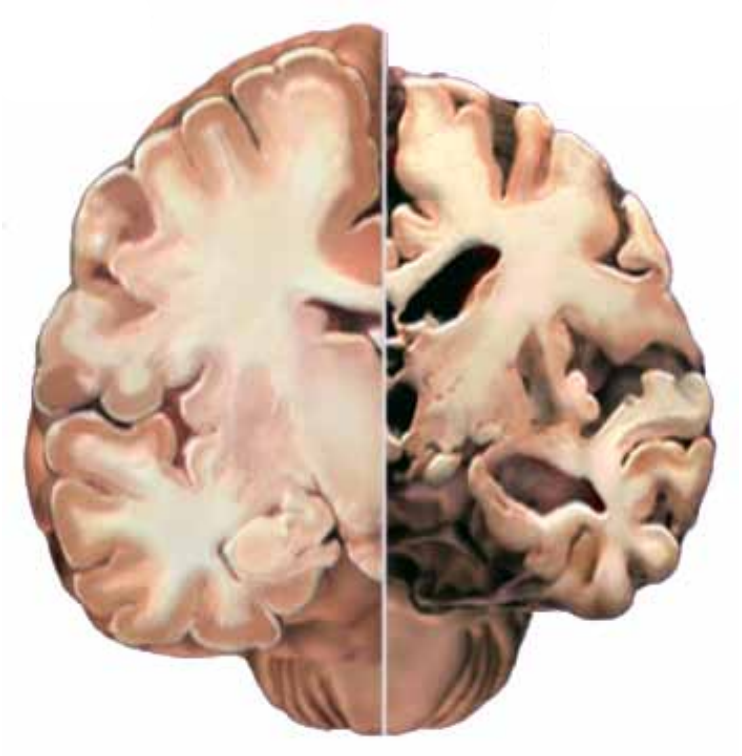


Figure 1 - *Schematic of the cross-section of a healthy brain (left panel) vs. a brain diseased with Alzheimer's (right panel).*

Due to the association with old age, the incidence of neurodegeneration in a population typcially increases considerably as average lifespan lengthens. In March 2010, an estimated 5.3 million people in the United States alone were living with Alzheimer's Disease (www.alz.org). This has led to widespread research of neurodegenerative disorders over the past few decades, seaking improvements in diagnosis, prognosis and treatment.

Novus Biologicals provides a wide variety of antibodies for neuroscience research. Select neuroscience antibodies are included in this technical catalog and separated by sub-research areas (see Table of Contents to the left). To search Novus' full antibody catalog, please visit **www.novusbio.com**.

Mitochondrial Dynamics

Mitochondria in healthy cells constantly cycle through fission and fusion. These mitochondrial dynamics are essential for mitochondrial energy production as well as regulation of cell proliferation and death via apoptosis.

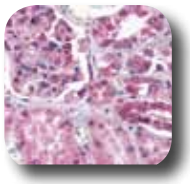
Problems with mitochondrial fusion and fission can be responsible for cell death leading to organism death in the fetal stages or in neurodegenerative conditions, such as Parkinson's disease later in life.

DRP1

A human dynamin-related protein, DRP1, contributes to mitochondrial division in mammalian cells. It plays this important role in mitochondrial fission at steady state and during apoptosis. DRP1 is required for proper cellular distribution of mitochondria and is important in regulating apoptosis and triggering cell death through increased mitochondrial fission. Overexpression of DRP1 promotes apoptosis.

Sample sizes are available for all products on this page.

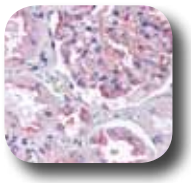
DRP1 Antibody
NB110-55237



Immuno-histochemical analysis of epithelium using NB110-55237.

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

DRP1 Antibody
NB110-55288



Immuno-histochemical analysis of epithelium using NB110-55288.

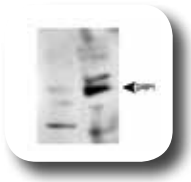
Species: Bv, Hu, Mk, Mu, Rt
Applications: IHC-P, WB

DRP1 Antibody
NB110-55237

Western blot analysis of DRP-1 in mouse embryonic fibroblast extracts using NB110-55237.

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

DRP1 Antibody
NB110-55288



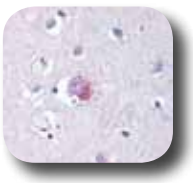
Western blot analysis of DRP1 knockout (lane 1) and wildtype MEF lysates (lane 2) using NB110-55288.

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

Mitofusin 1

A GTPase embedded in the outer membrane of the mitochondrion, Mfn1, along with Mfn2, is an essential promoter of mitochondrial fusion in mammalian cells. Overexpression of Mfn1 causes extensive tethering of mitochondria and an inhibition of apoptosis. Mfn1 is crucial to mediating the cycled balance between mitochondrial fusion and fission in mammalian cells.

Mitofusin1 Antibody
NB110-58853



Immuno-histochemical analysis of MFN-1 in human brain using NB110-58853.

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

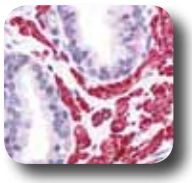
Western blot analysis of MFN1 using NB110-58853.

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

OPA1

OPA1 is a dynamin-related protein on the inner membrane of the mitochondrion and is required for mitochondrial fusion. OPA1 is similar to dynamin-GTPases such as mitofusin 1. OPA1 is required for regulation of apoptosis via mitochondrial fusion. Mutations in the OPA1 gene cause the dominant disease Optic Atrophy type 1.

OPA1 Antibody
NB110-55290



Immuno-histochemical analysis of prostatic smooth muscle and glandular epithelium using NB110-55290.

Species: Ch, Hu, Mk, Mu, Rt, Ze
Applications: IHC, WB

★★★★★
5 star review by customer

Western blot analysis of Opa-1 in mouse embryonic fibroblast extracts using NB110-55290.

Species: Ch, Hu, Mk, Mu, Rt, Ze
Applications: IHC, WB

Parkinson's Disease

Parkinson's Disease (PD) is a neurodegenerative condition that primarily affects motor coordination. PD generally affects the elderly, although early-onset cases do occur. Protein aggregates called Lewy bodies develop inside neural cells and displace other cellular contents in PD, leading to the neurodegeneration that is characteristic of the disease.

Alpha Synuclein

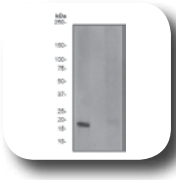
Alpha Synuclein is a presynaptic neuronal protein that is thought to be involved in the formation of SNARE complexes. Alpha Synuclein aggregations are a major component of the Lewy bodies that cause Parkinson's Disease, and can also be found in other neurodegenerative conditions. Mutations in Alpha Synuclein, thought to be responsible for this aggregation, are linked to familial Parkinson's Disease.

Alpha Synuclein (EP1646Y) Antibody
NB110-57475

Immuno-fluorescent analysis of PC12 cells using NB110-57475.

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

Alpha Synuclein (EP1536Y) Antibody [Ser129]
NB110-57476



Western blot analysis of Alpha Synuclein [Ser129] in fetal brain lysates using NB110-57476.

Species: Hu
Applications: WB

LRRK2 (PARK8)

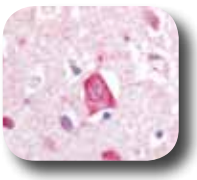
The LRRK2 gene is a member of the leucine-rich repeat kinase family and encodes a protein with an ankyrin repeat region, a leucine-rich repeat (LRR) domain, a kinase domain, a DFG-like motif, a RAS domain, a GTPase domain, an MLK-like domain, and a WD40 domain. The protein is present largely in the cytoplasm but also associates with the mitochondrial outer membrane. Mutations in this gene have been associated with PD.

LRRK2 Antibody
NB300-268

Immuno-fluorescent analysis of LRRK2 in transfected mouse CAD cells using NB300-268.

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

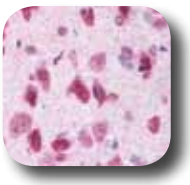
LRRK2 Antibody
NB300-268



Immuno-histochemical analysis of neurons and glia in human brain using NB300-268.

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

LRRK2 Antibody
NB110-55289



Immuno-histochemical analysis of neurons and glia in mouse brain using NB110-55289.

Species: Mu
Applications: IHC-P, WB

LRRK2 Antibody
NB110-58771

Immuno-histochemical analysis of mouse brainstem using NB110-58771.

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

LRRK2 Antibody
NB110-78625

Western blot analysis of LRRK2 in human brain using NB110-78625.

Species: Hu
Applications: WB

LRRK2 Antibody
NB110-78628

Western blot analysis of LRRK2 in human brain using NB110-78628.

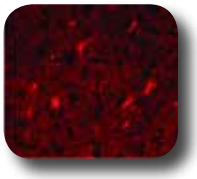
Species: Hu
Applications: WB

[LRRK2 NB300-268] Melrose HL, et al. A comparative analysis of leucine-rich repeat kinase 2 (Lrrk2) expression in mouse brain and Lewy Body disease. Neurosci. 2007 Jul 29:147(4):147: 1047-1058. [PMID:17611037].

DJ-1 (PARK7)

DJ-1 (PARK7) is related to autosomal-recessive early-onset Parkinsonism. DJ-1 works with Alpha Synuclein to protect neuronal cells from oxidative damage, and downregulation or mutation of DJ-1 eliminates this protection, leading to neural degeneration. Several distinct types of DJ-1 mutations have been linked to PD.

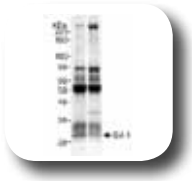
DJ-1 Antibody
NB300-270



Immuno-fluorescent analysis of human cortex using NB300-270.

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

DJ-1 Antibody
NB100-2272



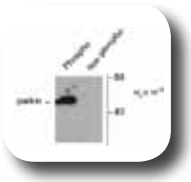
Western blot analysis of human DJ-1 in HeLa whole cell extracts using NB100-2272.

Species: Hu
Applications: IP, WB

Parkin (PARK2)

Mutations in the Parkin (PARK2) gene appear to be responsible for autosomal recessive juvenile Parkinsonism. Parkin plays a role in the ubiquitin-mediated proteolytic pathway by removal and/or detoxification of abnormally folded or damaged protein. Loss of this ubiquitin ligase activity appears to be the mechanism underlying pathogenesis of Parkin.

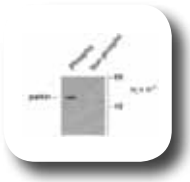
Parkin Antibody [Ser101]
NB100-61106



Western blot analysis of Parkin [Ser101] on HEK293 transfected cells using NB100-61106.

Species: Hu
Applications: WB

Parkin Antibody [Ser378]
NB100-61107



Western blot analysis of Parkin [Ser378] on HEK293 transfected cells using NB100-61107.

Species: Hu
Applications: WB

Parkin (EP668y) Antibody
NB110-57319

Immuno-histochemical analysis of human brain using NB110-57319.

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

PINK1

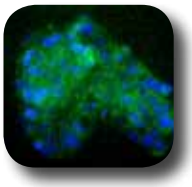
PTEN induced putative kinase 1 (PINK1) is found in the mitochondria and its homozygous C-terminus mutation has been implicated in the early development of PD. PINK1 was first discovered when researching the PTEN signaling pathway, thus PINK1 is also involved in many human cancers.

PINK1 Antibody
NB100-493

Western blot analysis of murine PINK1 in MES cell mitochondrial extracts using NB100-493.

Species: Hu, Mu
Applications: WB

PINK1 Antibody
BC100-494



Immuno-fluorescent analysis of PINK1 (Green) in HepG2 cells using BC100-494. Nuclei (Blue) are counter-stained with Hoechst 33258.

Species: Hu
Applications: ICC, IF, PEP-ELISA, WB

PINK1 Antibody
NB100-68154

Western blot analysis of rat testis lysate using NB100-68154.

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

PON1

PON1 is found on high-density lipoproteins (HDL) and can prevent neuronal damage by protecting against the accumulation of oxidized proteins in low-density lipoproteins (LDL). PON1 expression levels are reduced in Alzheimer's Disease, and PON1 polymorphisms are involved in the development of both Parkinson's and Alzheimer's diseases.

PON1 Antibody
NBP1-26401

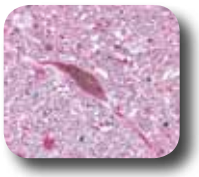
Westen blot analysis of human liver lysate using NBP1-26401.

Species: Hu
Applications: WB

UCHL1

Ubiquitin C-terminal hydrolase 1 (UCHL1), also known as PGP9.5, was originally identified as a major component of the neuronal cytoplasm from 2-dimensional gel analysis of brain tissues. Point mutations in the UCHL1 gene are associated with some forms of PD. Recent studies suggest that UCHL1 also has a ubiquitinyl ligase activity, being able to couple ubiquitin monomers by linking the C-terminus of one with lysine 63 of the other. Because of its abundance in nerves, UCHL1 has been widely used as a marker for peripheral nerve fibers.

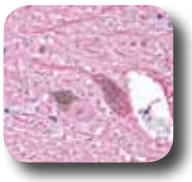
UCHL1 Antibody
NB300-675



Immuno-histochemical analysis of human brain using NB300-675.

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

UCHL1 Antibody
NB300-676



Immuno-histochemical analysis of neurons and cell processes using NB300-676.

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

UCLH1 Antibody
NB110-58872

Immuno-fluorescent analysis of rat mixed neuron/glial cultures stained with NB110-58872 (green). Blue is a DNA stain.

Species: Hu, Rt
Applications: IF, WB

UCHL1 Antibody
NB110-58874

Immuno-fluorescent analysis of rat mixed neuron/glial cultures stained with NB110-58874 (green). Blue is a DNA stain.

Species: Hu, Rt
Applications: IF, WB

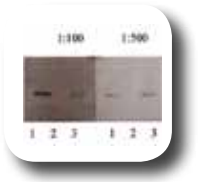
Alzheimer's Disease

Alzheimer's Disease (AD) is a progressive neurodegenerative condition that affects mental capacity, especially memory and behavior, as a result of amyloid plaques that accumulate in the brain of Alzheimer's patients. These plaques are believed to release radicals that kill local neurons by way of oxidative stress, reducing the number of neurons in AD sufferers.

Amyloid Beta

Amyloid beta-protein (Abeta) is associated with neuronal injury and death in AD. Abeta can cluster into oligomers, which form fibrils and then amyloid plaques that accumulate in the brain. The accumulation of plaques causes oxidative stress that leads to neuronal damage and subsequently AD. There are two types of Abeta: Abeta 40 and Abeta 42. Abeta 42 is more soluble and tends to aggregate into plaques more than Abeta 40.

Abeta 40 Antibody
NB300-225



Western blot analysis of Abeta 40 on 5 ng of peptide per lane using NB300-225. Lane 1: Abeta-40, lane 2: Abeta-42, lane 3: Abeta-40 and -42 mix.

Species: Hu, Mu
Applications: IP, WB

Abeta 42 Antibody
NB300-226

Western blot analysis of Abeta 42 on 5 ng of peptide per lane using NB300-226. Lane 1: Abeta-40, lane 2: Abeta-42, lane 3: Abeta-40 and -42 mix.

Species: Hu, Mu
Applications: IP, WB

ApoE/ApoER2/ApoE4

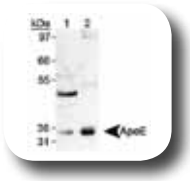
Apolipoprotein E is a lipoprotein involved in cholesterol transport. There are three isoforms of the ApoE lipoprotein. The ApoE4 isoform has been been suggested to play a role in type 2 (late onset) Alzheimer's disease. ApoE2 seems to be one of several genetic factors that plays a part in increased risk of heart attacks and strokes.

ApoE Antibody
NB100-1530

Western blot analysis of ApoE in human brain lysate using NB100-1530.

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

ApoE (WUE-4) Antibody
NB110-60531



Western blot analysis of ApoE in human tissue lysate using NB110-60531.
Lane 1: liver
Lane 2: brain

Species: Hu
Applications: ELISA, IHC, WB

ApoE Antibody
NBP1-19807

Western blot analysis of extracts from RAW264.7 cells using NBP1-19807.

Species: Hu, Mu, Rt
Applications: WB

ApoER2 Antibody
NB100-2216

Western blot analysis of ApoER2 in mouse brain lysate using NB100-2216.

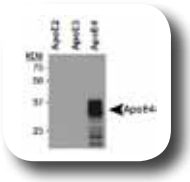
Species: Ch, Hu, Mu
Applications: WB

ApoER2 Antibody
NB100-2217

Western blot analysis of ApoER2 in mouse brain membrane lysate using NB100-2217.

Species: Bv, Ch, Hu, Mu
Applications: WB

ApoE4 (4E4) Antibody
NBP1-49529



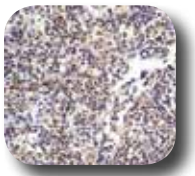
Western blot analysis of ApoE4 expression in concentrated supernatants of CHO cells secreting human ApoE2, ApoE3 or ApoE4 using NBP1-49529.

Species: Hu
Applications: ELISA, IP, WB

Bax

A pro-apoptotic protein found in the cytoplasm, mitochondria, and nucleus, Bax binds the anti-apoptotic protein Bcl-2 as a heterodimer or forms homodimers. The relative levels of pro-apoptotic proteins such as Bax and anti-apoptotic proteins such as Bcl-2 determine whether cell death will occur following an apoptotic stimulus. Increases in Bax expression promote the degeneration that results from increased apoptosis in progressing Alzheimer's disease. Bax plays a similar role in Huntington's disease.

Bax (E63) Antibody
NB110-55492



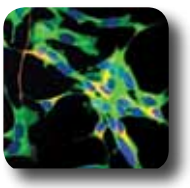
Immunohistochemical analysis of human lymph node using NB110-55492.

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

GAPDH

Glyceraldehyde 3-Phosphate Dehydrogenase (GAPDH) is a tetramer composed of four subunits and a metabolic enzyme responsible for catalyzing the reversible oxidative phosphorylation of glyceraldehyde 3-phosphate, one step in the glycolytic pathway. GAPDH is reported to bind to a variety of other proteins, including the amyloid precursor protein, mutations, that cause some forms of Alzheimer's disease, and the polyglutamine tracts of Huntingtin. GAPDH may also have a role in the regulation of apoptosis and migrates from the cytoplasm into the nucleus when cells become apoptotic.

GAPDH (1D4) Antibody
NB300-221



Immunofluorescent analysis of human neuroblastoma line Sh-SY5Y stained using NB300-221 (green).

Species: Bv, Hu, Mu, Po, Rt, Av
Applications: IF, WB

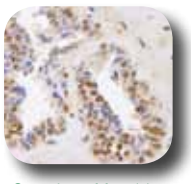
★★★★★
5 star review by customer

GAPDH (2D4A7) Antibody
NB300-328

Western blot analysis of GAPDH in mouse liver using NB300-328.

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

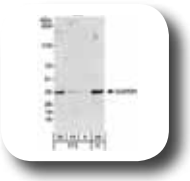
GAPDH Antibody
NB110-40628



Immunohistochemical analysis of human prostate adenocarcinoma using NB110-40628.

Species: Hu, Mu
Applications: IHC-P

GAPDH Antibody
NB300-322



Western blot analysis of human and mouse GAPDH using NB300-322.

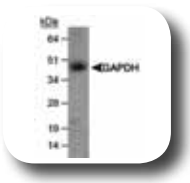
Species: Hu, Mu
Applications: ICC, IF, WB

GAPDH (EPR1977Y) Antibody
NB100-79955

Immunohistochemical analysis of colon adenocarcinoma using NB100-79955.

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

GAPDH Antibody
NB300-327



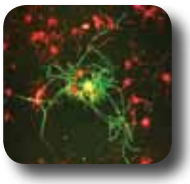
Western blot analysis of GAPDH in mouse liver using NB300-327.

Species: Av, Bv, Hu, Mu, Po, Rt
Applications: IF, WB

Neurofilament M

Neurofilaments are intermediate filament proteins found specifically in neurons. NF-M is the medium neurofilament subunit. Antibodies to NF-M are useful to detect this protein and identify neurons and their processes in tissue sections and in tissue culture. NF-M can also be useful in studies of neurofilament accumulations seen in many neurological diseases, such as Alzheimer's disease and Amyotrophic Lateral Sclerosis.

160 kDa Neurofilament M (3H11) Antibody
NB300-134



Immuno-fluorescent anaylsis adult neural cells using NB300-134.

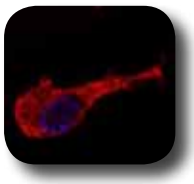
Species: Av, Hu, Ma, Mu
Applications: IF, IHC-P, WB

160 kDa Neurofilament M Antibody
NB300-133

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

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

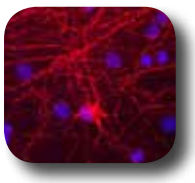
160 kDa Neurofilament M (NF-09) Antibody
NB500-446



Immuno-fluorescent anaylsis of medium protein in murine Neuro2A cells using NB500-446.

Species: Bv, Hu, Ma, Mu, Po, Rt
Applications: ELISA, ICC, IF, IHC, WB

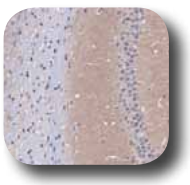
160 kDa Neurofilament M Antibody
NBP1-30036



Immuno-fluorescent anaylsis of cultured neurons and glia using NBP1-30036 (red).

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

BAI1 Antibody
NB110-81586



Immuno-histochemical anaylsis of mouse brain using NB110-81586.

Species: Hu, Mu
Applications: IHC-P

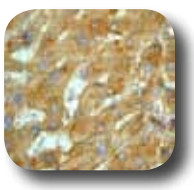
BAI1

BAI1, or brain specific angiogenesis inhibitor 1, is a phosphatidylserine receptor that is critical for the recognition and engulfment of apoptotic cells. Reduced blood flow and inhibition of formation of new vasculature are both present in neurodegenerative diseases such as Alzheimer's. Increased expression of BAI1 may be responsible for these reductions in angiogenesis, and may contribute to or be a by-product of neurodegeneration.

Presenilin

Alzheimer's disease patients with an inherited form of the disease carry mutations in the presenilin proteins (PSEN1; PSEN2). The discovery that a deficiency of PSEN1 decreases the production of amyloid beta-protein (Abeta) identified the presenilins as important mediators of the gamma-secretase cleavage of beta-amyloid precursor protein (APP). It has been shown that two conserved transmembrane aspartates in PSEN1 are critical for Abeta production, providing evidence that Presenilin either functions as a required diaspartyl cofactor for gamma-secretase or is itself gamma-secretase. PSEN2 shares substantial sequence and possibly functional homology with PSEN1.

Presenilin 1 (EP2000Y) Antibody
NB110-59959



Immuno-histochemical analysis of human liver using NB110-59959.

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

Presenilin 1 (EP1998Y) Antibody
NB110-66667

Western blot analysis on (A) Jurkat and (B) HEK293 cell lysates using NB110-66667.

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

Presenilin 2 (EP1515Y) Antibody
NB110-57435

Immuno-histochemical analysis of human kidney using NB110-57435.

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

Somatostatin Receptor 2

Somatostatin is a tetradecapeptide that is widely distributed in the body and functions as a neuropeptide affecting electrical activity of neurons. Somatostatin levels decrease with the development and progression of AD and have been shown to be a reliable marker of the disease. Somatostatin Receptor 2 expression has been shown to accurately reflect the changes in Somatostatin levels that come with AD.

Somatostatin Receptor 2 Antibody
NB300-157

Immuno-fluorescent anaylsis of rat tissue using NB300-157.

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

Huntington's Disease

Huntington's disease (HD) is a neurodegenerative disorder caused by an expanding polyglutamine repeat in the huntingtin gene. HD is a mid-life onset autosomal dominant neurodegenerative disease that is characterized by psychiatric disorders, dementia, and involuntary movements (chorea), leading to death in 10-20 years. The HD gene product is widely expressed in human tissues, with the highest level of expression in the brain.

Huntingtin

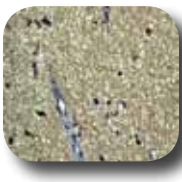
The huntingtin gene product is expressed at similar levels in patients and controls, which suggests that the expansion of the polyglutamine repeat induces a toxic gain of function perhaps through interactions with other cellular proteins. Huntingtin associated protein 1 (HAP1) has been identified as a protein that associates with huntingtin. *In vitro* data suggest that the association between HAP1 and huntingtin is enhanced by increasing length of glutamine repeat in huntingtin. involuntary movements (chorea), leading to death in 10-20 years. The HD gene product is widely expressed in human tissues, with the highest level of expression in the brain.

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

Huntingtin (EP867Y) Antibody
NB110-57069



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

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

Huntingtin (HDB4E10) Antibody
NB600-1197

Western blot analysis of normal human cerebral cortex using NB600-1197.

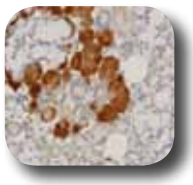
Species: Hu, Mu, Rt
Applications: IHC-Fr, IP, WB

Huntingtin Antibody
NBP1-44265

Western blot analysis on mouse brain extract using NBP1-44265.

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

Huntingtin (3F1) Antibody
H00003064-M11



Immuno-histochemical analysis of human salivary gland using H00003064-M11.

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

Huntingtin Antibody
NBP1-03377

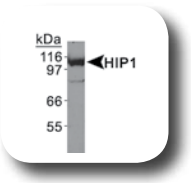
Immuno-fluorescent anaylsis of 1 day- old mouse cortical cell culture using NBP1-03377.

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

HIP1

The Huntingtin Interacting Protein 1 (HIP-1) is a reportedly proapoptotic, cargo-specific adaptor protein that may be involved in the pathogenesis of Huntington's disease. In addition to playing a role in Huntington's, it is likely to be involved in the recruitment of clathrin coats to lipid membranes and it may also factor in tumorigenesis by allowing the survival of precancerous and cancerous cells.

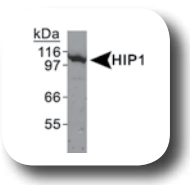
HIP1 (4B10) Antibody
NB300-203



Western blot analysis on HeLa whole cell extracts using NB300-203.

Species: Hu
Applications: WB

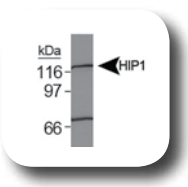
HIP1 (1B11) Antibody
NB300-204



Western blot analysis on HeLa whole cell extracts using NB300-204.

Species: Hu, Mu
Applications: WB

HIP1 Related (1E1) Antibody
NB300-206



Western blot analysis of HIP1 on HeLa whole cell extract using NB300-206.

Species: Hu, Rt
Applications: WB

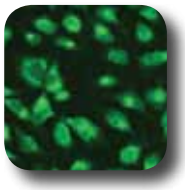
Amyotrophic Lateral Sclerosis

ALS is a neurodegenerative disease characterized by protein misfolding and aggregation, defective axonal transport, mitochondrial dysfunction and excitotoxicity. These molecular and cellular problems lead to neuronal death causing improper muscle function and, eventually, muscular atrophy, paralysis, and death.

SOD1

Superoxide Dismutase 1 (SOD1) is an antioxidant that is responsible for destroying radicals that cause oxidative stress in neurons and other cells in the body. Mutations in the SOD1 gene eliminate this protective activity and are the cause of 20% of all familial ALS cases. In addition, mutant SOD1 may accumulate in the mitochondria of affected neurons.

SOD1 (EP1727Y) Antibody
NB110-57590



Immuno-fluorescent analysis of HeLa cells using NB110-57590.

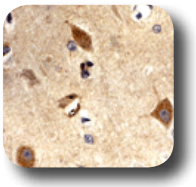
Species: Hu, Rt
Applications: FACS, ICC, IF, IHC, WB

SOD1 (EP1727Y) Antibody
NB110-57590

Western blot analysis of SOD1 in Jurkat cell lysate using NB110-57590.

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

SOD1 Antibody
R-168-100



Immuno-histochemical analysis of human brain tissue using R-168-100.

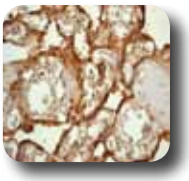
Species: Hu
Applications: IHC, WB

SOD1 Antibody
NB100-60944

Western blot analysis of SOD1 in mouse brain lysate using NB100-60944.

Species: Ca, Hu, Mu, Rt
Applications: ELISA, WB

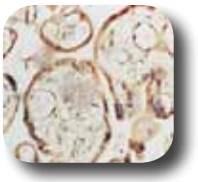
SOD1 Antibody
NB100-80050



Immuno-histochemical analysis of human placenta using NB100-80050.

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

SOD1 Antibody
NB100-1955



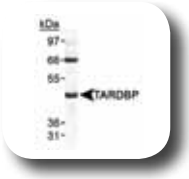
Immuno-histochemical analysis of human placenta using NB100-1955.

Species: Bv, Ca, Hu, Mk, Mu, Po, Rb, Rt, Sh, Xp
Applications: ELISA, IHC, IP, WB

TARDBP

TARDBP, (Tar DNA Binding Protein 43; TDP-43) has been traditionally studied as an HIV transcription repressor, however it has recently been shown that TARDBP accumulates abnormally in post-mortem brain tissue from individuals diagnosed with both ALS and FTD (Frontal Temporal Dementia). This observation provides a long-sought connection between these two diseases that often overlap clinically.

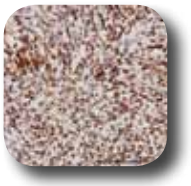
TARDBP Antibody
NB110-55376



Western blot analysis of TARDBP in HeLa whole cell extracts using NB110-55376.

Species: Ch, Hu, Mk, Mu, Xp, Ze
Applications: WB

TARDBP (2E2-D3) Antibody
H00023435-M01



Immuno-histochemical analysis of humain leiomyosarcoma using H00023435-M01.

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

[TARDBP H00023435-M01] Johnson BS, et al. A yeast TDP-43 proteinopathy model: Exploring the molecular determinants of TDP-43 aggregation and cellular toxicity. PNAS. 2008 Apr 29;105(17):6439-44. [PMID:18434538]

Sensory Systems

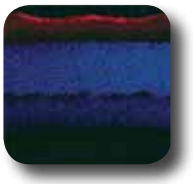
Vision

Vision is a complex process involving interactions between the surface and lens of the eye, the retina and neural receptors in and attached to the eye, and the processing by the brain of information collected from the eyes. Because there are many processes involved in eyesight, a wide range of genes are involved with the processes of collecting, relaying, and processing visual signals. Likewise, mutations to any of these genes can cause problems in a variety of areas including ocular development, retinal development or degeneration, or signal transmission to the brain.

RPE65

Highly conserved among vertebrate species, RPE65 is a major protein of the retinal pigment epithelium (RPE). RPE65 is essential for the regeneration of rhodopsin in the visual cycle. Mutations in RPE65 are responsible for certain forms of autosomal recessive severe retinal dystrophy, including Leber Congenital Amaurosis.

RPE65 (401.8B11.3D9) Antibody
NB100-355



Immuno-fluorescent anaylsis of of mouse retina tissue using NB100-355.

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

[RPE65 NB100-355] Lall MM, et al. Iron regulates L-cystine uptake and glutathione levels in lens epithelial and retinal pigment epithelial cells by its effect on cytosolic aconitase. Invest Ophthalmol Vis Sci 2008 Jan;49(1):310-9. [PMID:18172108]

Bestrophin

Bestrophin is a basolateral plasma membrane protein responsible for Best macular degeneration, the early-onset form of vitelliform macular dystrophy. Bestrophin is a chloride channel and is also a useful biochemical and histological marker of retinal pigment epithelial cells.

Bestrophin 1 (E6-6) Antibody
NB300-164

Western blot analysis of human RPE cell lysate using NB300-164.

Species: Hu, Mk, Po
Applications: IF, WB

CaMKI (EP2218Y) Antibody
NB110-66656

Western blot analysis of CAMKI in SH-SY5Y cell lysate using NB110-66656.

Species: Hu
Applications: FACS, IP, WB

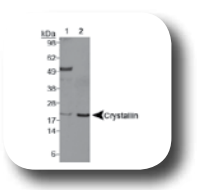
CaM Kinase 1

Calcium/calmodulin-dependent kinases (CaMKs) are a subfamily of the serine/threonine protein kinase family. There have been multiple substrates identified for CaMK1, including synapsin 1, synapsin 2, CREB, and CFTR. Studies suggest that CaMK1 plays an important role in retinal function and its expression is regulated by light stimulation. CAMK1 is also involved in neurite stimulation.

Crystallin AB

Crystallin AB is a protein that makes up a large part of the lens of the eye and is crucial to lens transparency. Crystallin AB is also important in protecting the retina from stress due to inflammation.

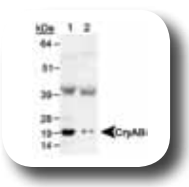
Crystallin AB Antibody
NB100-2520



Western blot analysis of Lane 1: human skeletal muscle and Lane 2: mouse skeletal muscle proteins using NB100-2520.

Species: Hu, Mu
Applications: WB

Crystallin AB Antibody
NB100-2519



Western blot analysis of human skeletal muscle and mouse skeletal muscle using NB100-2519.

Species: Ch, Gp, Hu, Mk, Mu, Po, Rb, Rt, Sh
Applications: WB

Crystallin AB Antibody
NB100-77336

Western blot analysis of CryAB in mouse eye lysate using NB100-77336.

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

FOX E3

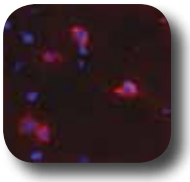
FOXE3 is involved in lens development and, specifically, is critical to the development of adhesive properties of the lens. PAX6 may be required for expression of FOXE3. Mutations can cause congenital primary aphakia, a condition in which the eye has no lens.

See Catalog number NB100-1273

mGluR6

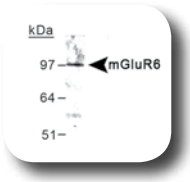
Metabotropic glutamate receptor 6 mutations lead to congenital stationary night blindness. The receptor is crucial for depolarizing ON bipolar cells and transmitting signals from photoreceptors to the ON bipolar cells. Mutations disrupt this signal transmission.

mGluR6 Antibody
NB300-189



Immuno-fluorescent analysis of GluR6 in trapezoid body in mouse brain using NB300-189.

Species: Mu, Rt
Applications: IF, WB



Western blot analysis of mGluR6 in mouse brain lysate using NB300-189.

Species: Mu, Rt
Applications: IF, WB

Mucolipin-1 Antibody
NB110-82375

Western blot analysis of Mucolipin-1 in mouse brain lysates using NB110-82375.

Species: Hu, Mu, Rt
Applications: WB

Mucolipin-1

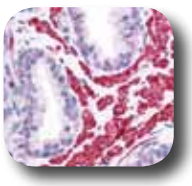
Defects in Mucolipin-1 are the cause of mucolipidosis type IV (MLIV), also known as sialolipidosis. MLIV is an autosomal recessive lysosomal storage disorder characterized by severe psychomotor retardation and ophthalmologic abnormalities, including corneal opacity, retinal degeneration and strabismus. Storage bodies of lipids and water-soluble substances are seen by electron microscopy in almost every cell type of the patients.

Nir2

Nir2, a human homolog of *Drosophila melanogaster* retinal degeneration B protein, is essential for cytokinesis. A specific Thr residue in the Nir2 PI-transfer domain provides a regulatory site for targeting to lipid droplets. Mutations cause retinal degeneration and may affect intracellular lipid trafficking.

See Catalog number NB100-1417

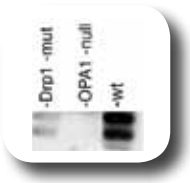
Opa1 Antibody
NB110-55290



Immuno-histochemical analysis of human prostate using NB110-55290.

Species: Ch, Hu, Mk, Mu, Rt, Ze
Applications: IHC, WB

★★★★★
5 star review by customer



Western blot analysis of Opa-1 in mouse embryonic fibroblast extracts using NB110-52290.

Species: Ch, Hu, Mk, Mu, Rt, Ze
Applications: IHC, WB

Opa1

OPA1 is a gene more commonly associated with mitochondrial dynamics, but it was originally characterized as an optic atrophy protein. Mutations in OPA1 eliminate the protection that OPA1 usually provides from oxidative stress. These mutations cause optic neuropathy resulting in a loss of vision and dominant optic atrophy.

DMBX1

DMBX1 (OTX3) is involved in promoting eye development and lens formation and is required for formation of the anterior neural structure. DMBX1 genes have been shown to regulate RAX expression. Mutations in DMBX1 can cause micropthalmia or anopthalmia.

DMBX1 Antibody
H00127343-B01

Western blot analysis of DMBX1 in transfected 293T cell line using H00127343-B01. Lane 1: DMBX1 transfected lysate. Lane 2: Non-transfected lysate.

Species: Hu
Applications: ELISA, WB

PAX6

Pax6 (aniridia) is a transcription factor involved in eye development and cell cycle regulation. Both overexpression and underexpression of PAX6 result in microphthalmia.

PAX6 Antibody
NB100-61654

Western blot analysis of PAX6 in mouse eye lysate using NB100-61654.

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

PAX6 Antibody
NB300-750

Western blot analysis of PAX6 in rat whole eye extract using NB300-750.

Species: Ch, Hu, Mu, Rt, Sh, Xp
Applications: WB

RARA

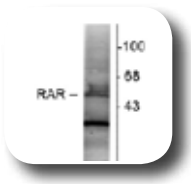
Retinoic Acid Receptor alpha (RARA) is expressed throughout the eye with highest expression in the retina. RARA may be involved in the development of ganglion cells in the eye.

RARA Antibody
NB300-969

Western blot analysis of RARA in human brain lysate using NB300-969.

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

RARA (763) Antibody
NB200-322



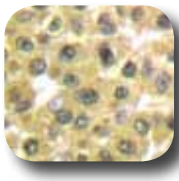
Western blot analysis of RARA in rat hippocampal lysate using NB200-322.

Species: Hu
Applications: WB

RARB

Retinoic Acid Receptor beta (RARB) is highly expressed especially in the sclera and the choroid and is expressed throughout the eye except in the lens. RARB is involved with eye weight, and an absence of RARB results in fewer eye cells.

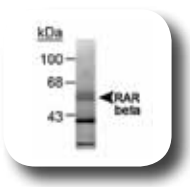
RARB Antibody
NB100-91952



Immuno-histochemical analysis of human breast carcinoma tissue using NB100-91952.

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

RARB (336) Antibody
NB200-323



Western blot analysis of RARB in rat hippocampal lysate using NB200-323.

Species: Hu
Applications: WB

3-OHKYN

3-hydroxykynurenine (3-OHKYN) is a UV protectant and an antioxidant in vertebrate lens. 3-OHKYN is critical to the maintenance of lens proteins by acting as a UV filter. 3-OHKYN also reacts with proteins to induce cross-linking.

3-OHKYN (P3UI) Antibody
NB100-597

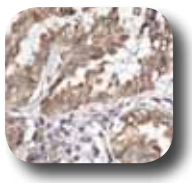
Western blot analysis of 3'OHKYN in modified BSA using NB100-597. Lane 1: BSA (-) Lane 2: BSA (+).

Species: All
Applications: ICC, WB

SHH

Sonic Hedgehog Protein (SHH) is important in retinal development. Mutations in the gene coding for the SHH protein cause micropthalmia and other ocular deformities that can cause childhood blindness.

SHH (EP1190Y) Antibody
NB110-56923



Immuno-histochemical analysis of human kidney tissue using NB110-56923.

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

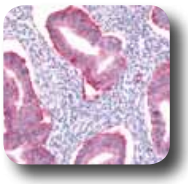
Western blot analysis of SHH in fetal liver membrane using NB110-56923.

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

SOX2

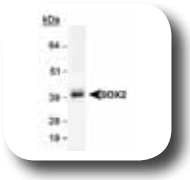
SOX2 is involved in promoting cell differentiation and proliferation in the developing eye as well as retinal development. SOX2 also regulates other genes such as RAX that control ocular development. Mutations in SOX2 lead to microphthalmia or anophthalmia.

SOX2 Antibody
NB110-37235



Immunohistochemical analysis of uterus, endometrial glands using NB110-37235.

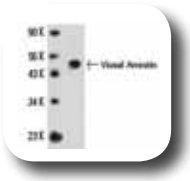
Species: Ch, Hu, Mu, Sh
Applications: FACS, ICC, IF, IHC-P, WB



Western blot analysis of SOX2 in mouse brain lysate using NB110-37235.

Species: Ch, Hu, Mu, Sh
Applications: FACS, ICC, IF, IHC-P, WB

Arrestin 3 retinal (PDS-1) Antibody
NB100-2385



Western blot analysis of Visual Arrestin in human retina tissue extract using NB100-2385.

Species: Bv, Hu, Po
Applications: IF, IHC-Fr, WB

Visual Arrestin

Visual arrestin is a protein involved in the regulation of phototransduction. It is crucial to the regulation of receptor signaling in the eye and the termination of signals. Mutations in visual arrestin can lead to photoreceptor cell death and retinal degeneration.

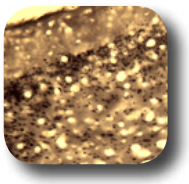
Hearing

Hearing is a complex interaction between many structures of the ear that work together to amplify sound vibrations, convert those vibrations into electrical signals, and then carry those signals to the brain. Because there are several steps between when sound enters the ear and when the brain receives the information, there are many places where problems can occur in hearing. Damaged ear structures, missing or damaged hair cells in the inner ear, and damaged signaling structures and signal carriers are all potential causes of hearing loss.

ARC

ARC (Arg3.1) is a protein involved in maintaining synaptic plasticity as well as regulation of endocytosis. Decreased levels of ARC have been associated with tinnitus and subsequent hearing loss due to tinnitus.

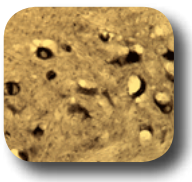
ARC Antibody
R-173-500



Immunohistochemical analysis of free floating cryosectioned rat brain (cortex) using R-173-500.

Species: Mu, Rt
Applications: IHC

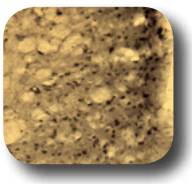
ARC Antibody
R-173-500



Immunohistochemical analysis of free floating cryosectioned rat spinal cord (ventral horn) using R-173-500.

Species: Mu, Rt
Applications: IHC

ARC Antibody
R-154-100



Immunohistochemical analysis of free floating cryosectioned rat spinal cord (dorsal horn) using R-154-100.

Species: Mu, Rt
Applications: IHC

Connexin 26

Connexin 26 (GJB2) is a component of gap junctions in the inner ear. Mutations in the gene encoding Connexin 26 are the most common cause of hereditary non-syndromic hearing loss. Connexin 26 is highly expressed in cochlear regions, and mutations interfere with gap junctions in the cochlea, leading to deafness.

Connexin 26 Antibody
NB100-57840

Western blot analysis of Connexin 26 in mouse brain lysate using NB100-57840.

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

Channels

Channels are essential to signaling between different cells and cell types and enable interactions between different organ systems to occur. Channels act both as receptors that transfer signals and as openings in the plasma membrane to allow chemicals such as potassium and calcium to move into and out of a cell. In neuroscience, channels are especially important in transmitting signals from sensory organs to the brain.

CACNB4

CACNB4 encodes a member of the beta subunit family, a protein in the voltage-dependent calcium channel complex. This protein plays an important role in calcium channel function by modulating G protein inhibition, increasing peak calcium current, controlling the alpha-1 subunit membrane targeting and shifting the voltage dependence of activation and inactivation. Certain mutations in this gene have been associated with idiopathic generalized epilepsy and juvenile myoclonic epilepsy.

CACNB4 Antibody
NB100-55414

Western blot analysis of human bone marrow lysate using NB100-55414.

Species: Hu
Applications: PEP-ELISA, WB

NMDAR1 Antibody
NB100-41105

Western blot analysis of NMDAR1 in rat brain lysate using NB100-41105.

Species: Rt
Applications: PEP-ELISA, WB

NMDAR1

The GRIN1 (NMDAR1) gene encodes a critical subunit of N-methyl-D-aspartate receptors. These are members of the glutamate receptor channel superfamily which are heteromeric protein complexes with multiple subunits arranged to form a ligand-gated ion channel. These subunits play a key role in the plasticity of synapses believed to underlie memory and learning.

5HT3A Receptor

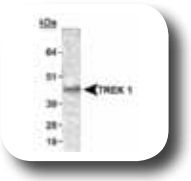
5HT3A Receptor, also known as HTR3A, encodes subunit A of the type 3 receptor for 5-hydroxytryptamine (serotonin), a biogenic hormone that functions as a neurotransmitter, a hormone, and a mitogen. A member of the ligand-gated ion channel receptor superfamily, this receptor causes fast, depolarizing responses in neurons after activation. It appears that the heteromeric combination of A and B subunits is necessary to provide the full functional features of this receptor, since either subunit alone results in receptors with very low conductance and response amplitude.

5HT3A Receptor Antibody
NB100-41382

Western blot analysis of 5HT3A in human colon lysate using NB100-41382.

Species: Hu
Applications: PEP-ELISA, WB

TREK1 Antibody
NB110-41535



Western blot analysis of TREK1 in human brain membrane lysate using NB110-41535.

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

TREK1

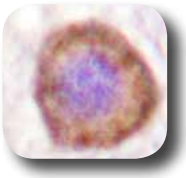
TREK1 is a two-pore-domain background potassium channel expressed throughout the central nervous system. It is opened by polyunsaturated fatty acids and lysophospholipids and is regulated by various neurotransmitters. It has been shown that alterations in the functioning, regulation, or both of the TREK1 channel may alter mood. TREK1 is also activated by volatile anesthetics and has been suggested to be an important target in the action of these drugs. Therefore, this particular K^+ channel emerges as a potential innovative target for developing new therapeutic agents for anesthesiology and neurology.

Voltage-Gated Potassium Channel

Voltage-gated potassium channels are important determinants of neuronal membrane excitability. The expression patterns and density of K^+ channels contribute to the variations in action potential waveforms and repetitive firing patterns seen in the differing neuronal cell types.

The kv2.2 subunit is expressed on all neuronal somata and proximal dendrites, while the kv3.1 subunit is expressed at high levels in neurons that characteristically fire rapid trains of action potentials, especially in the brainstem.

Kv1.3 Antibody
NBP1-19415



Immuno-histochemical analysis of human brain tissue using NBP1-19415.

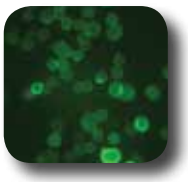
Species: Hu, Mu, Rt
Applications: IF, IHC-P

VGPC, kv2.2 Antibody
NB300-261

Western blot analysis of Kv2.2-subunit in rat brain homogenate using NB300-261.

Species: Rt, Xp
Applications: IHC, WB

VGPC, kv3.1 [Ser503] Antibody
NB300-279



Immuno-fluorescent analysis of CHO cells expressing Kv3.1using NB300-279.

Species: Rt
Applications: IF, IHC-Fr, WB

TRPA1 Antibody
NB110-40763

Western blot analysis of TRPA1 in human brain membrane fraction using NB110-40763.

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

TRPA1

TRPA1 is a TRP-related channel that responds to cold temperatures and pungent compounds and plays a role in both nociceptor and hair cell transduction. It is a transformation-associated gene product in lung epithelia, whereas its protein distribution is primarily restricted to sensory neurons. Blocking TRPA1 may be a therapeutic target for treating cold hyperalgesia caused by inflammation and nerve damage. The TRPA1 protein is also widely expressed outside of the CNS and is dys-regulated during oncogenic transformation.

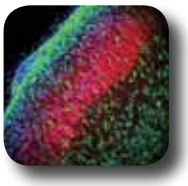
TRPC3, TRPC4, and TRPC5

TRPC3, TRPC4, and TRPC5 are thought to form receptor-activated non-selective calcium permeant cation channels and are operated by a phosphatidylinositol second messenger system activated either by receptor tyrosine kinases or G-protein coupled receptors. TRPC4 and TRPC5 have also been shown to be calcium-selective and may also be activated by intracellular calcium store depletion. TRPC3, TRPC4, and TRPC5 are all expressed abundantly in the brain, with TRPC5 levels higher in the fetal brain. TRPC3 is concentrated in cerebellar Purkinje cells and sparsely localized in cerebellar granule lyer, pontine nuclei and the thalamus, while TRPC4 is concentrated in hippocampal CA1 pyramidal neurons, dentate gyrus granule cells, and cerebral cortical neurons.

TRPM2

TRPM2 is part of the cation transport channel family, a group of proteins that have six transmembrane helices in which the last two helices flank a loop which determines ion selectivity. TRPM2 is a calcium and sodium channel that mediates the flow of these two ions in response to oxidative stress. In response to oxidative stress, TRPM2 can encourage cell death.

TRPM2 Antibody
NB110-81601



Immuno-cytochemical analysis of rat hippocampus using NB110-81601 (red).

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

TRPM2 Antibody
NB110-82364

Western blot analysis of TRPM2 in mouse brain membrane lysates using NB110-82364.

Species: Mu, Rt
Applications: WB

Signaling

Signaling proteins facilitate the cellular implementation of messages received from other cells and organ systems, providing a transition between neurons and the cells that they effect. Proteins involved in cell signaling are essential to virtually all processes in an organism, especially those involving the transmission of signals to the central nervous system and the brain.

Striatin

Striatin is found in all mammalian cells and may be involved in vesicular transport, dendrite growth, and cellular signaling. It binds Protein phosphatase 2A, A and C subunits and calmodulin and appears to modulate PP2A activity.

Striatin Antibody
NB110-74571

Immuno-fluorescent analysis of NIH3T3 using NB110-74571.

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

SG2NA (S68) Antibody
NB110-74572

Western blot analysis of SG2NA in NIH3T3 cell lysates using NB110-74572.

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

Synaptotagmin 1 [Thr202] Antibody
NB300-235

Western blot analysis of phospho Synaptotagmin using NB300-235.

Species: Rt
Applications: IHC, WB

Synaptotagmin 1 [Ser309] Antibody
NB300-236

Western blot analysis of phospho Synaptotagmin using NB300-236.

Species: Rt
Applications: IHC, WB

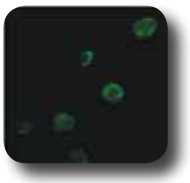
Synaptotagmin

Synaptotagmin is a calcium sensor for synaptic vesicle exocytosis and it can be phosphorylated by multiple protein kinases. This may play a key role in modulation of synaptotagmin's ability to influence both the exocytotic and endocytotic components of synaptic transmission.

Calreticulin

Calreticulin is a multifunctional, highly conserved calcuim-binding protein that is localized to the endoplasmic reticulum. Calreticulin has also been shown to interact with the cytoskeleton and to be involved in the regulation of gene expression. Calreticulin may play a role in cellular proliferation including its apparent activity in the proliferation of certain viruses within mammalian host cells.

Calreticulin Antibody
NB600-101



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

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

Calreticulin Antibody
NB600-103

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

Species: Hu
Applications: WB

Calreticulin Antibody
NB100-58808

Western blot analysis of human and mouse Calreticulin in HeLa and NIH/3T3 cells using NB100-58808.

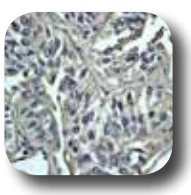
Species: Hu, Mu
Applications: WB

[Calreticulin NB600-101] Jain P., et al. Identification of human T cell leukemia virus type 1 tax amino acid signals and cellular factors involved in secretion of the viral oncoprotein. J Biol Chem. 2007 Nov 23;282(47):34581-93. [PMID:17897946]

Calmodulin

Calmodulin is found in all eukaryotic cells and can bind up to four calcium ions. It acts as an important intracellular receptor for regulatory calcium signals. As it binds calcium, calmodulin undergoes conformational changes which can increase its affinity for target proteins.

Calmodulin (EP799Y) Antibody
NB110-55649



Immuno-histochemical analysis of human urinary bladder carcinoma using NB110-55649.

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

Western blot analysis of Calreticulin in NIH 3T3 cell lysate using NB110-55649.

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

SNAP25

SNAP25, a presynaptic plasma membrane protein, is widely distributed throughout the brain and involved in the regulation of neurotransmitter release. Variations in SNAP25 levels are associated with Down Syndrome, Alzheimer's disease, and Schizophrenia.

SNAP25 Antibody
NB100-1492

Western blot analysis of SNAP25 in mouse brain lysate using NB100-1492.

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

SNAP25 Antibody
NB300-737

Western blot analysis of SNAP25 in rat cortex lysate using NB300-737.

Species: Bv, Ca, Ch, Hu, Mu, Mk, Rt, Ze, Gp
Applications: WB

RGS1 Antibody
NB100-1029

Western blot analysis of RGS1 in HepG2 lysate using NB100-1029.

Species: Hu
Applications: WB

RGS1

The RGS1 gene encodes a member of the regulator of G-protein signaling family. The protein attenuates the signaling activity of G-proteins by binding to activated, GTP bound G alpha subunits and acting as a GTPase activating protein, increasing the rate of conversion of the GTP to GDP. This hydrolysis allows the G alpha subunits to bind G beta/gamma subunit heterodimers, forming inactive G protein heterotrimers, thereby terminating the signal.

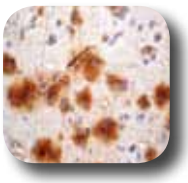
Neurotrophins

Neurotrophins and neurotrophic factors are responsible for promoting the growth of neurons and protecting their survival. Neurotrophic factors are anti-apoptotic proteins that provide protection to neurons. Neurotrophin receptors likewise are important in neuron growth and survival.

NGF-beta

Nerve Growth Factor (NGF) is important for the development and maintenance of the sympathetic and sensory nervous systems. It stimulates division and differentiation of sympathetic and embryonic sensory neurons.

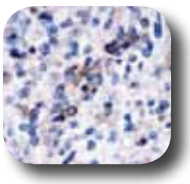
NGF (EP1320Y) Antibody
NB110-57270



Immuno-histochemical analysis of human brain using NB110-57270.

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

NGFR (EP1039Y) Antibody
NB110-58000



Immuno-histochemical analysis of human brain glioma using NB110-58000.

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

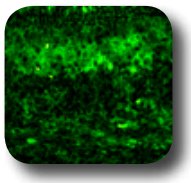
NGFR

The Nerve Growth Factor Receptor (NGFR) is responsible for the mediations of cell survival, differentiation, growth cessation, and apoptosis in neurons. It stimulates division and differentiation of sympathetic and embryonic sensory neurons.

p75NTR

p75NTR was originally discovered as a low affinity nerve growth factor receptor and it was later found that p75NTR was the receptor for all neurotrophins. It mediates signals of neurotrophins for neuronal survival, apoptosis, neurite outgrowth and synaptic plasticity. Recently, it has been revealed that p75NTR is also a receptor for many other pathological ligands.

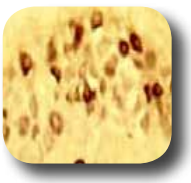
p75NTR Antibody
M-009-100



Immuno-fluorescent analysis of mouse brain (cerebellum) using M-009-100.

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

BDNF Antibody
R-088-100



Immuno-histochemical analysis of rat dorsal root ganglion using R-088-100.

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

BDNF

Brain-derived neurotrophic factor (BDNF) is a polypeptidic factor initially regarded to be responsible for neuron proliferation, differentiation and survival. BDNF has been shown to be linked to a variety of neurological and psychological conditions such as Huntington's disease, Alzheimer's, depression and anxiety. BDNF also enhances the neurite outgrowth on immature astrocytes.

Neuronal Markers

There are many different antibodies that are useful as markers for a variety of specific types of neurons and other CNS-related cells. This is a small selection of our collection of neuronal markers. For a more extensive listing see our Markers catalog and browse our website: www.novusbio.com.

Survivin

Survivin encodes a structurally unique inhibitor of apoptosis that appears to be situated at the crossroads of cell death and cell division, governing a checkpoint involved in cytokinesis while also suppressing apoptosis.

Survivin is abundantly expressed in brain tissues (astrocytes and some neurons) of adult rats following traumatic brain injury and has been found co-expressed with NeuN and PCNA.

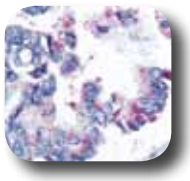
Survivin Antibody
NB500-201

Telophase with accumulation of survivin in the midbodies of two daughter cells using NB500-201.

Species: Ca, Hu, Mu, Rt, Fe
Applications: ChIP, ICC, IF, IHC-P, IP, WB

★★★★★
5 star review by customer

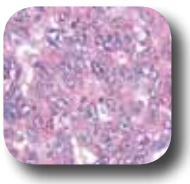
Survivin (32.1) Antibody
NB500-237



Immuno-histochemical analysis of human lung carcinoma using NB500-237.

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

Survivin (60.11) Antibody
NB500-238



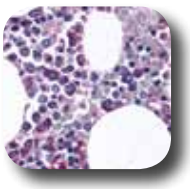
Immuno-histochemical analysis of ovary carcinoma using NB500-238.

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

CD11b/c

CD11b is implicated in various adhesive interactions of monocytes, macrophages and granulocytes as well as in mediating the uptake of complement coated particles. CD11b is commonly used as a microglial marker in nervous tissue.

CD11b/c Antibody
NB110-40766



Immuno-histochemical analysis of bone marrow, myeloid precursors using NB110-40766.

Species: Hu, Mu
Applications: FACS, ICC, IF, IHC-P, WB

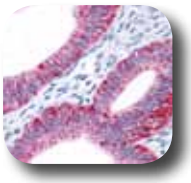
★★★★☆
4 star review by customer

CD11b/c Antibody
NB110-40766

Western blot analysis of CD11 b/c in RAW 264/7 cell lysate using NB110-40766.

Species: Hu, Mu
Applications: FACS, ICC, IF, IHC-P, WB

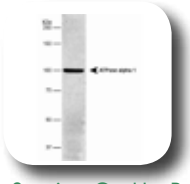
ATPase alpha 1 (464.6) Antibody
NB300-146



Immuno-histochemical analysis of endometrial glands within the uterus using NB300-146.

Species: Ca, Hu, Po, Mk, Mu, Rt, Rb, Sh, Xp
Applications: FACS, ICC, IF, IHC-P, WB

★★★★★
5 star review by customer



Western blot analysis of ATPase (alpha) in porcine proximal tubule protein, using NB300-146.

Species: Ca, Hu, Po, Mk, Mu, Rt, Rb, Sh, Xp
Applications: FACS, ICC, IF, IHC-P, WB

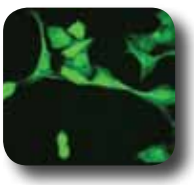
ATPase alpha 1

Na,K-ATPase is an integral membrane protein complex, comprised of an alpha and beta subunit, that hydrolyzes ATP to maintain the transmembrane gradients of Na^+ and K^+. The alpha-polypeptide has been shown to be the catalytically active subunit, wherease the Beta-polypeptide appears necessary for assembly and transport of the sodium pump to the membrane.

GAP43

GAP43 is expressed by developing and regenerating neurons and, to a lesser extent, reactive glial cells. It is used widely to specifically label injured neurons and to score neuronal regeneration.

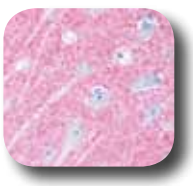
GAP43 Antibody
NB100-79952



Immuno-fluorescent analysis of PC-12 cells using NB100-79952.

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

GAP43 Antibody
NB300-143



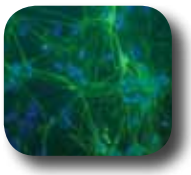
Immuno-histochemical analysis of the hippocampus using NB300-143.

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

Neurofilaments

Neurofilaments are the intermediate filaments found specifically in neuronal cells. Antibodies to the various neurofilament subunits are very useful cell type markers since the proteins are among the most abundant of the nervous system, are expressed only in neurons, and are biochemically very stable.

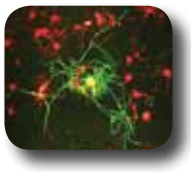
68 kDa Neurofilament Light (DA2) Antibody
NB300-132



Immuno-fluorescent analysis of cultured neurons (green) using NB300-132.

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

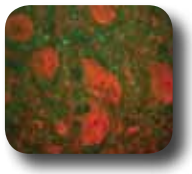
160 kDa Neurofilament Medium (3H11) Antibody
NB300-134



Immuno-fluorescent analysis of mature neurons using NB300-134.

Species: Hu, Ma, Mu, Av
Applications: IF, IHC-P, WB

200 kDa Neurofilament Heavy Antibody
NB300-135



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

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

[Neurofilament Heavy Chain NB300-135] O'Donnell LA, et al. Human immunodeficiency virus (HIV)-induced neurotoxicity roles for the NMDA receptor subtypes. J Neurosci 2006; 26:981-990. Jan 18;26(3);981-90. [PMID:16421318]

GFAP

Glial fibrillary acidic protein (GFAP) is a member of the class III intermediate filament protein family. It is heavily and specifically expressed in astrocytes and certain other astroglia in the central nervous system, in satellite cells in peripheral ganglia, and in non-myelinating Schwann cells in peripheral nerves. In addition, neural stem cells frequently strongly express GFAP. Antibodies to GFAP are therefore very useful as markers of astrocytic cells. In addition many types of brain tumors, presumably derived from astrocytic cells, heavily express GFAP.

GFAP Antibody
NB300-141

Immuno-fluorescent analysis of typical astrocytic cells using NB300-141 in neurons and glia of rat forebrain.

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

GFAP (2A5) Antibody
NB300-142

Rat cortical neurons and glia in mixed tissue culture stained using NB300-213 (green) and NB300-142 (red).

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

GFAP Antibody
NB110-58368

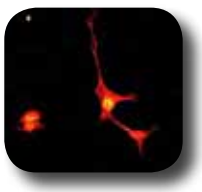
Immuno-fluorescent analysis of cultured GFAP positive rat astrocytes using NB110-58368.

Species: Rt
Applications: ICC, IF, IHC

Synapsin 1

Synapsin is a neuron specific protein that is localized to nerve terminals. The synapsin protein is an excellent marker for synaptic terminals and it can be used to estimate synaptic density and/or synaptogenesis. In addition to their role in neurotransmission, the synapsins are also thought to play a role in synapse formation.

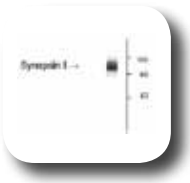
Synapsin I (E377) Antibody [Ser553]
NB110-57605



Immuno-fluorescent analysis of PC-12 cells using NB110-57605.

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

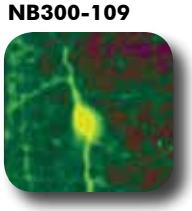
Synapsin 1 Antibody
NB300-104



Western blot analysis of Synapsin 1 in rat hippocampal lysate using NB300-104.

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

Tyrosine Hydroxylase Antibody
NB300-109



Immuno-fluorescent analysis of retina tissue using NB300-109.

Species: Dr, Ma
Applications: ICC, IF, IHC-Fr, WB

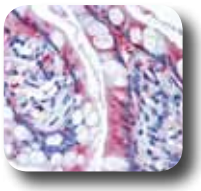
Tyrosine Hydroxylase

Tyrosine hydroxylase (TH) is the rate-limiting enzyme in the synthesis of the catecholamines dopamine, epinephrine and norepinephrine. Regulation of the TH enzyme represents the central means for controlling the synthesis of these important catecholamines. The presence of different DNA sequences at the TH locus confers susceptibility to various disorders of the brain including manic-depression and schizophrenia.

XCT

The XCT cystine/glutamic amino acid transporter has been proposed to be responsible for the cystine transport through the plasma membrane. In the brain, it has been proposed that XCT is up-regulated in glial cells upon oxidative stress and plays an essential role to protect neurons against oxidative stress.

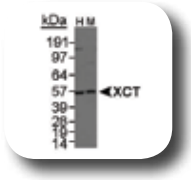
XCT Antibody
NB300-318



Immuno-histochemical analysis of XCT in the absorptive epithelia of intestinal villi using NB300-318.

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

XCT Antibody
NB300-318



Western blot analysis of XCT in total human and mouse stomach lysate, respectively, using NB 300-318.

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

[XCT NB300-318] Liu R, et al. Cystine-glutamate transporter SLC7A11 mediates resistance to geldanamycin, but not to 17-(allylamino)-17-demethoxygeldanamycin. Mol Pharmacol. 2007 Dec; 72(6):1637-1646. [PMID:17875604]

Musashi-1

Musashi-1 (Msi-1), a neural RNA-binding protein, plays an important role in regulating cell differentiation in precursor cells. Musashi-1 has been shown to increase the accumulation of Tau isoforms in intracellular inclusions in dementia and may play a role in various neurodegenerative disorders.

Musashi-1 Antibody
NB100-1759

Immuno-fluorescent analysis of neural rosettes using NB100-1759.

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

Musashi-1 (Msi1) Antibody
NBP1-32812

Western blot analysis of H1299 whole cell lysate using NBP1-32812.

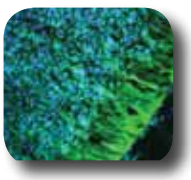
Species: Hu
Applications: WB

Musashi-1 (EP1302) Antibody
NB110-57235

Immuno-histochemical analysis of human brain using NB110-57235.

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

Nestin Antibody
NB100-1604



Immuno-fluorescent analysis of mouse brain showing Nestin (green) using NB100-1064.

Species: Mu
Applications: IF, IHC, WB

Nestin (10C2) Antibody
NB300-266

Immuno-fluorescent analysis of PC-3 cells using NB300-266.

Species: Hu
Applications: FACS, ICC, IF, IHC-Fr, IHC-P, WB

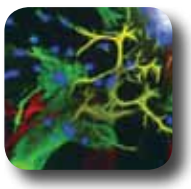
Nestin

Nestin is a Class VI intermediate filament expressed in the developing central nervous system in early embryonic neuroepithelial stem cells. This protein has been widely used as a predominant marker for stem cells, progenitor cells, glioma cells, and tumor endothelial cells.

Vimentin

Vimentin is the intermediate filament protein subunit found in many mesenchymal and epithelial cells, in many cells in tissue culture, and in developing neuronal and astrocytic precursor cells in the central nervous system. Vimentin frequently forms co-polymers with other intermediate filament proteins. Vimentin antibodies are useful in studies of stem cells and are used to reveal the filamentous cytoskeleton.

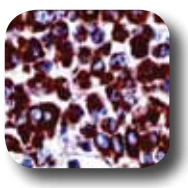
Vimentin Antibody
NB300-223



View of mixed neuron/glial cultures stained with NB300-223 (green) and NB300-141(red).

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

Vimentin (SP20) Antibody
NB110-57645



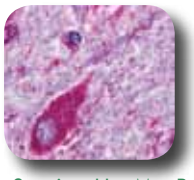
Immuno-histochemical analysis of human melanoma stained with NB110-57645.

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

GPCRs

G-protein coupled receptors (GPCRs) are a wide-ranging family of transmembrane proteins involved in signal transmission across the plasma membrane. The G-protein ligands that bind GPCRs often elicit sensory responses such as taste or smell. Neurotransmitters also stimulate GPCRs to relay messages across cell membranes.

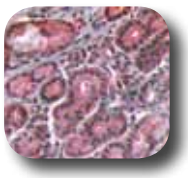
GPR49 (LGR5) Antibody
NLS1236



Immuno-histochemical analysis of human brain, neurons and glia using NLS1236.

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

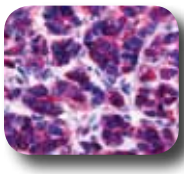
BDKRB1 Antibody
NLS3580



Immuno-histochemical analysis of human nasal mucosa using NLS3580.

Species: Hu
Applications: IHC-P

GPR30 Antibody
NLS1183

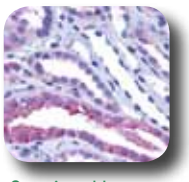


Immuno-histochemical analysis of breast carcinoma using NLS1183.

Species: Hu
Applications: IHC-P

★★★★☆
4 star review by customer

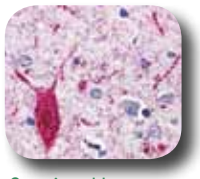
MAS1 Antibody
NLS1531



Immuno-histochemical analysis of kidney using NLS1531.

Species: Hu
Applications: IHC-P

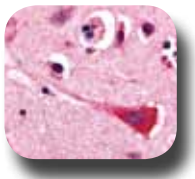
EDG1 Antibody
NLS1013



Immuno-histochemical analysis of human brain (neurons and glia) using NLS1013.

Species: Hu
Applications: IHC-P

GPR17 Antibody
NLS4229



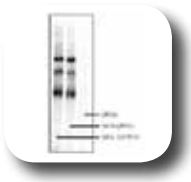
Immuno-histochemical analysis of human brain (neurons and glia) using NLS4229.

Species: Hu
Applications: IHC-P

NMDA Receptors

NMDA receptors are ionotropic glutamate receptors that regulate the opening and closing of ion channels that control the flux of Ca^{2+}, K^{+}, and Na^{+} into and out of cells. Different NMDA receptors vary in the location and structure of the NMDA binding site as well as the interactions between the receptor and surrounding compounds. NMDA receptor interactions are crucial to proper cellular function and communication, especially in neurons. Malfunctioning NMDA receptors may be a crucial factor in Huntington's Disease.

NMDA Receptor 2B Antibody [Tyr1472]
NB300-182



Western blot analysis of phospho NMDA NR2B in rat tissue lysate, using NB300-182.

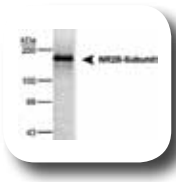
Species: Rt
Applications: WB

NMDA Receptor 2A Antibody
NB300-105

Western blot analysis of NMDA NR2A in rat hippocampal lysate using NB300-105.

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

NMDA Receptor 2B Antibody
NB300-106



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

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

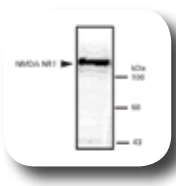
★★★★☆
4 star review by customer

NMDA Receptor 2C Antibody
NB300-107

Western blot analysis of NMDA NR2C in rat cerebellar lysate using NB300-107.

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

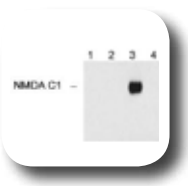
NMDAR1 Antibody
NB300-118



Western blot analysis of NMDA NR1 protein in rat brain lysate using NB300-118.

Species: Mu, Rt
Applications: IP, WB

NMDA Receptor C1 Antibody
NB300-115



Western blot analysis of NMDA NRC1 in HEK overexpression lysates using NB300-115.

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

IN THE NEWS

1. [Alpha Synuclein S-075-50] Pelkonen A, et al. Stimulated dopamine overflow and alpha-synuclein expression in the nucleus accumbens core distinguish rats bred for differential ethanol preference. J Neurochem. 2010 Aug;114(4):1168-76. [PMID: 20533994]

2. [Alpha Synuclein (Nitrated) NBP1-26380] Giasson BI, et al. Oxidative damage linked to neurodegeneration by selective alpha-synuclein nitration in synucleinopathy lesions. Science. 2000 Nov 3;290(5493):985-9. [PMID: 11062131]

3. [Calreticulin NB600-101] Anderson DJ, et al. Recruitment of functionally distinct membrane proteins to chromatin mediates nuclear envelope formation in vivo. J Cell Biol. 2009 Jul 27;186(2):183-91. [PMID: 19620630]

4. [CD11b/c NB110-40766] Chakrabarty P, et al. IFN-gamma promotes complement expression and attenuates amyloid plaque deposition in amyloid beta precursor protein transgenic mice. J Immunol. 2010 May 1;184(9):5333-43. [PMID: 20368278]

5. [GAP43 NB300-143] Miller AM, Treloar HB, Greer CA. Composition of the migratory mass during development of the olfactory nerve. J Comp Neurol. 2010 Dec 15;518(24):4825-41. [PMID: 21031554]

6. [IRE1 Alpha NB100-2323] Hoozemans JJ, et al. The unfolded protein response is activated in pretangle neurons in Alzheimer's disease hippocampus. Am J Pathol. 2009 Apr;174(4):1241-51. [PMID: 19264902]

7. [LC3B NB600-1384] Liu MT, et al5-HT4 receptor-mediated neuroprotection and neurogenesis in the enteric nervous system of adult mice. J Neurosci 2009;29(31):9683-9699. [PMID: 19657021]

8. [LRRK2 NB300-268] Santpere G, Ferrer I. LRRK2 and neurodegeneration. Acta Neuropathol. 2009 Mar;117(3):227-46. [PMID: 19142648]

9. [Niemann Pick C1 NB400-148] Charman M, et al. MLN64 mediates egress of cholesterol from endosomes to mitochondria in the absence of functional Niemann-Pick Type C1 protein. J Lipid Res. 2010 May;51(5):1023-34. [PMID: 19965586]

10. [PINK1 BC100-494] Cui M, et al. Perturbations in mitochondrial dynamics induced by human mutant PINK1 can be rescued by the mitochondrial division inhibitor mdivi-1. J Biol Chem. 2010 Apr 9;285(15):11740-52. [PMID: 20164189]

11. [RPE65 NB100-355] Ke Y, et al. Retinal astrocytes respond to IL-17 differently than retinal pigment epithelial cells. J Leukoc Biol. 2009 Dec;86(6):1377-84. [PMID: 19690291]

12. [STEP NB300-202] Zhang Y, et al. Genetic reduction of striatal-enriched tyrosine phosphatase (STEP) re verses cognitive and cellular deficits in an Alzheimer's disease mouse model. Proc Natl Acad Sci U S A. 2010 Nov 2;107(44):19014-9. [PMID: 20956308]

13. [TARDBP H00023435-M01] Saito T, et al. Neocortical Layer Formation of Human Developing Brains and Lissencephalies: Consideration of Layer-Specific Marker Expression. Cereb Cortex. 2010 Jul 12. [PMID: 20624841]

14. [Tyrosine Hydroxylase NB300-110] Ditting T, et al. Do distinct populations of dorsal root ganglion neurons account for the sensory peptidergic innervation of the kidney? Am J Physiol Renal Physiol. 2009 Nov;297(5):F1427-34. [PMID: 19692481]

15. [ATG9A NB110-56893] ★★★★★
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 at a dilution of 1:1,000 and achieved a specific band at approximately 90 kDa. The researcher stated "I was very happy to use this product and another one for LC3 from your company and would gladly recommend it for anyone interested." *- Reviewed by Dr. Panaiyur S. Mohan*

U.S. ORDERING

Phone: 303.730.1950
888.506.6887
Fax: 303.730.1966
Email: orders@novusbio.com
Web: www.novusbio.com

EUROPEAN ORDERING

Novus Europe
Phone: +44 (0) 1223 426001
Fax: +44 (0) 871 971 1635
Email: europe@novusbio.com
Web: www.novusbio.com

Novus Germany
Phone: +49-6922-22340-60
Fax: +49-0800-58926-79
Email: germany@novusbio.com
Web: www.novusbio.com

Novus Italy
Phone: +39 02 4032 6786
Fax: +39 02 4032 6340
Email: italy@novusbio.com
Web: www.novusbio.com

CANADIAN ORDERING

Phone: 905.827.6400
Phone: 855.668.8722
Fax: 905.827.6402
Email: canada@novusbio.com
Web: www.novusbio.com

TECHNICAL SUPPORT

Phone: 303.730.1950
888.506.6887
Email: technical@novusbio.com

Chat with a Scientist featured on our website: www.novusbio.com