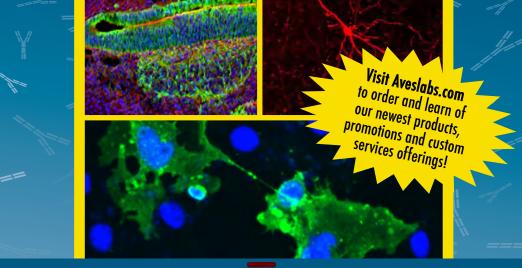
aveslabs.com

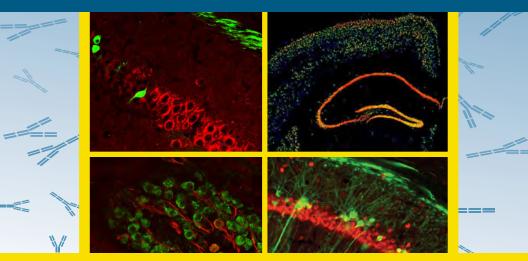




Neural Marker Antibodies Epitope Tag Antibodies

...chicken antibodies against mouse, rat and human proteins

CATALOG



Animal-Friendly Antibodies! Useful in Immunohistochemistry.

ABOUT AVES LABS

For over 20 years, Aves Labs has been a leading global provider of polyclonal chicken antibodies (IgY) and custom peptide synthesis for life science research. Our scientific expertise and innovative solutions help customers tackle complex problems from research and development to production.

Specializing in high-affinity custom chicken antibody (IgY) production, Aves Labs can generate antibodies from customer-supplied recombinant proteins, synthetic peptides, as well as other unique antigens.

We are dedicated to the humane practice of producing polyclonal antibodies in chickens. Everything we do reflects our serious commitment to customer satisfaction, animal care, and the delivery of the highest quality antibodies.

MEET OUR STAFF



Gary Ciment, Ph.D.

Dr. Ciment co-founded Aves Labs to help researchers develop novel, animal-friendly solutions to further neuroscience research. His 30+ years of scientific and academic experience enables him to serve as a key scientific resource for Aves Labs and your projects. Dr. Ciment's novel algorithms for identifying immunogenic regions within proteins has been used extensively for the antibody products in this catalog and can be used to develop custom chicken antibodies for clients.

Matt has been with Aves Labs for over 15 years. He plays a key role in both animal care and antibody development. Matt has seen it all at Aves – and this experience equips him to be a key technical resource for your projects.



Mathew Phillips



Jean Teh

With Aves Labs for over fifteen years, Jean is your primary contact for facilitating product orders and organizing your custom projects. She also assists with antibody production. In everything she does, Jean takes great pride in ensuring our customers get the service they expect and deserve.

Aves Labs is proud to announce that we have joined forces with two leaders in the neuroscience field, Antibodies Incorporated and PhosphoSolutions. This partnership enables Aves Labs to offer our customers nearly 1,000 internally produced antibodies and feature a full suite of custom services, allowing us to meet all of your neuroscience research needs.

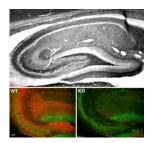
NeuroMab





antibodiesinc.com

For over 50 years, Antibodies Incorporated has served the research and diagnostic community. That tradition continues today, with the widely recognized NeuroMab portfolio of antibodies, as well as a host of services offered from our ISO, USDA, OLAW and NIH certified facility.

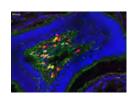


Anti-Slo 1/BKAlpha potassium channel (L6/60) from Antibodies Incorporated: Adult rat hippocampus immunohistochemistry.

Bottom: Immunofluorescence staining of hippocampal CA3 of adult WT and Slo1 KO mice with L6/60 (red) and Kv2.1 rabbit polyclonal (green).



Founded in 2001 and led since then by Dr. Michael D. Browning and Kristin Nixon, PhosphoSolutions' roots stem from the laboratory of Dr. Paul Greengard, co-recipient of the 2000 Nobel Prize in Medicine for his work on the role of protein phosphorylation in signal transduction in the nervous system. This expertise has led to the development of a portfolio of nearly 300 antibodies – including over 100 phospho-specific antibodies – focused primarily in the neuroscience field.



Anti-RBPMS (1832-RBPMS) from PhosphoSolutions: Immunostaining of blind mole rat RGCs showing RBPMS in red and melanopsin in green. Image courtesy of Jens Hannibal, MD, PhD., DmSc. Bispebjerg Hospital, University of Copenhagen, Denmark.

aves.

Work with the Leader in Custom Chicken Antibody Services

For over two decades, Aves Labs has been producing custom chicken polyclonal antibodies for customers in academia and industry worldwide.

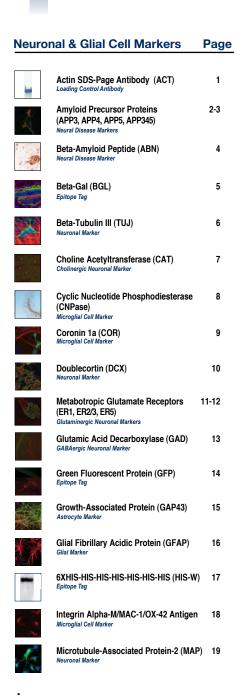
- Chickens make better antibodies against conserved antigens
- Alternative host increases multiplexing possibilities
- Economical process with high antibody yields
- Comprehensive technical support and service
- Humane, non-invasive method of antibody development

Our newly-designed facilities can support projects tailored to your requirements, including bulk production sizes (>100mg). Using protein sequence data, we can identify immunogenic peptides with our proprietary Immunogenicity Algorithm™ and then synthesize the peptide and produce custom-made affinity-purified chicken antibodies including anti-phosphopeptide antibodies.

Get your research project started today!

Contact us at (530) 758-4400 or info@aveslabs.com
for a consultation and quote.

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Anti-Goat IgG		
Chicken Anti-Goat IgG-Unlabeled		

- HRP-labeled Chicken Anti-Goat IgG
- Fluorescein-labeled Chicken Anti-Goat IgG

Anti-Human IgG

- Chicken anti-Human IgG-Unlabeled
- HRP-labeled Chicken Anti-Human IgG
- Fluorescein-labeled Chicken Anti-Human IgG

Anti-Mouse IgG

- HRP-labeled Chicken Anti-Mouse IgG
- Fluorescein-labeled Chicken Anti-Mouse IgG

Anti-Rabbit IgG

- Chicken Anti-Rabbit IgG-Unlabeled
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- ▼ Fluorescein Goat anti-Chicken IgY
- ▼ Horseradish Peroxidase Goat Anti-Chicken IgY
- ▼ Non-Immune Chicken IaY
- ▼ Unlabeled Goat Anti-Chicken IgY

Note: Prices subject to change without notice. Please visit our website for the most current price list.

CAT# ACT

About ACT:

Our anti-actin antibody (made against rabbit muscle actin) recognizes mouse, rat and human actin proteins in SDS-polyacrylamide gel transfers onto nitrocellulose membranes. This loading control assures that similar amounts of total proteins were added to each of the lanes in the gels. NOTE: This product doesn't work in transfers using PVDF membranes.

Anti-ACT Antibody:

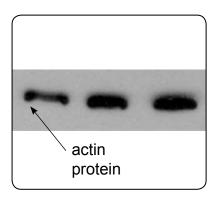
Antibodies were prepared by injecting laying hens with actin purified from rabbit muscle. After repeated boosts, immune eggs were collected, and the lgY fractions were purified from the yolks. These lgY fractions were then affinity-purified using a peptide column. The final product contains 50% glycerol (v/v), purified anti-actin lgY fraction (10 mg/ml) spiked with 25 ug/ml of affinity purified anti-actin lgY, and then filter-sterilized.

IgY Concentration:

10 mg/ml of the non-affinity purified IgY fraction in phosphate-buffered isotonic saline (PBS) with 0.02% sodium azide (w/v) as an antimicrobial.

Applications:

Western Blot (1:1,000-1:2,000 recommended dilution). Do NOT use this product with PVDF, or other nylon-based membranes, because this often produces unacceptably high backgrounds in chemiluminescence studies



An adult mouse brain homogenate was subjected to electrophoresis, and then transferred to a nitrocellulose membrane. After a 15-minute blocking step with BlokHen (Cat.# BH-1001) and washing steps, "ACT" antibody was added at a dilution of 1:2000 for a 1-hour incubation, followed by another set of washing steps. This antibody was then detected with HRP-labeled goat anti-chicken IgY (Cat.# H-1004; 1:1000 dilution) and washed again. Note the strong single band at the predicted molecular weight for G-actin.

Prices: \$125 - Individual Vial - (0.1 ml) (10.0 mg/ml) (Cat# ACT-1010) \$255 - Individual Vial - (0.4 ml, 10.0 mg/ml) (Cat# ACT-1040)

CAT# APP3, APP4, APP5, APP345

About APP Peptides:

Amyloid Precursor Protein (APP, UniProt Accession Number P05067) is a 770 amino acid, single-pass transmembrane protein whose beta-amyloid proteolytic fragment can form neurotoxic extracellular accumulations in human cerebral cortex, and is widely believed to be the cause of Alzheimer's dementia. However, the **normal** function of APP itself is still obscure, as are potential functions of various proteolytic fragments that have been observed in human brain [Muller, U.C., Deller, T., Korte, M. (2017) Nature Reviews Neuroscience 18: 281-298)]. To better understand these functions, we have made a set of five anti peptide antibody reagents against APP. One of the peptide sequences used is within the beta-amyloid fragment and recognizes the extracellular amyloid plaques observed in Alzheimer patient's brains (see product "ABN," which follows in this catalog). Three other peptide sequences used, however, are within the extracellular domain of APP outside of this domain, and are useful for identifying the APP protein itself, and various proteolytic fragments, rather than the beta-amyloid peptide and plaques.

Anti-APP Peptide #3 Antibody:

This antibody recognizes the peptide sequence QHF QEK VES LEQ EAA NER AA, which corresponds to residues #433-452 of the human APP gene product. This peptide sequence is 100% conserved between human, mouse and rat homologs of APP, and the antibodies against this sequence cross-react with all three species. The antibody preparation is at a concentration of 100 ug/ml (based on absorbance at 280 nm).

Anti-APP Peptide #4 Antibody:

This antibody recognizes the peptide EQK DRQ HTL KHF EHV RMV DPK K, which corresponds to residues #501-522 of the human APP gene product. This peptide sequence is also 100% conserved between human, mouse and rat homologs of APP, and the antibodies against this sequence cross-react with all three species. The antibody preparation is at a concentration of 100 ug/ml (based on absorbance at 280 nm).

Anti-APP Peptide #5 Antibody:

This antibody recognizes the peptide EEI QDE VDE LLQ KEQ NYS DD, which corresponds to residues #556-575 of the human APP gene product. This peptide sequence is also 100% conserved between human, mouse and rat homologs of APP, and the antibodies against this sequence cross-react with all three species. The antibody preparation is at a concentration of 100 ug/ml (based on absorbance at 280 nm).

Antibodies:

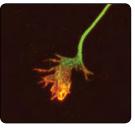
Anti-APP Peptide #345 Three different affinity-purified anti-peptide antibodies were combined to make this product. The concentrations of each of the three antibodies was 100 ug/ml (based on absorbance at 280nm), making the total antibody concentration 300 ug/ml. The presence of antibodies against three different regions of APP increases IHC sensitivity and fluorescence intensity.

Applications:

1:500-1:000 for immunohistochemistry and immunocytochemistry using 2% paraformaldehyde-fixed tissues or cells.







APP5

Photomicrograph of growth cones of mouse cortical neurons in culture. The green staining shows immunoreactivity against APP; the red staining is phalloidin fluorescence — a plant alkaloid which binds with high affinity to filamentous actin within the edges of these growth cones. Photomicrograph courtesy of Dr. Phillip Copenhaver, Oregon Health & Sciences University.

\$399 - Individual Vial - (1000 µl, 100 µg/ml) (Cat# APP3) Prices:

\$250 - 1 - NeuroSamplerTM kit (200 µl) NSK-1

\$420 - As part of a 3 - NeuroSamplerTM kit (200 µl of 3) NSK-3

\$399 - Individual Vial - (1000 µl, 100 µg/ml) (Cat# APP4) Prices:

\$250 - 1 - NeuroSamplerTM kit (200 µl) NSK-1

\$420 - As part of a 3 - NeuroSampler kit (200 µl of 3) NSK-3

\$399 - Individual Vial - (1000 µl, 100 µg/ml) (Cat# APP345) Prices:

\$250 - 1 - NeuroSamplerTM kit (200 µl) NSK-1

\$420 - As part of a 3 - NeuroSamplerTM kit (200 µl of 3) NSK-3

\$399 - Individual Vial - (1000 µl, 300 µg/ml) (Cat# APP345) Prices:

\$250 - 1 - NeuroSamplerTM kit (200 µl) NSK-1

Beta-Amyloid Peptide (N-terminus)

CAT# ABN

About Beta-Amyloid Peptide:

Beta-Amyloid peptide is a 40- or 42-amino acid fragment of the human Beta-Amyloid Precursor Protein (770 amino acids) produced by the proteolytic actions of Beta and Gamma-secretases. Both forms of Beta-amyloid peptide are rather insoluble and tend to self-agaregate into distinctive extracellular "plaques." These plaques are evident in brains from patients with Alzheimer's disease, as well as in brains from individuals with a history of traumatic head injuries. In the case of Alzheimer's disease, it has been suggested that these extracellular Beta-amyloid peptide plagues are themselves cytotoxic (rather than simply being markers of brain pathology), and are responsible for the dendritic pruning and other neurodegenerative changes seen.

Anti-Beta-Amyloid Antibodies:

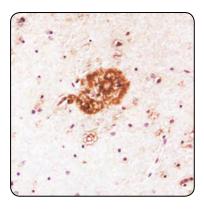
Beta-Amyloid peptide antibodies were generated against a KLH-conjugated N-terminal sequence contained within both the 40- and 42-amino acid versions of the human Beta-Amyloid peptide (i.e., DAE FRH DSG YEV HHQ KL) (Amyloid Precursor Protein residues #672-688). These antibodies have been validated with human, mouse and rat tissues.

IgY Concentrations:

100 ug/ml in phosphate-buffered isotonic saline (PBS) with 0.1% bovine serum albumin (w/v) and 0.02% sodium azide (w/v) as an anti-microbial.

Applications:

Immunohistochemistry (1:2,000-1:5,000 recommended dilution) Immunocytochemistry (1:2.000-1:5.000 recommended dilution)



Beta-Amyloid-positive "neuritic plaque" in cerebral cortex as seen in a post-mortem specimen taken from an Alzheimer's disease patient. Picture courtesy of Dr. Randy Woltjer, Oregon Health & Sciences University.

Prices:

\$399 - Individual Vial - (1000 µl, 100 µg/ml) (Cat# ABN)

\$250 - 1 - NeuroSamplerTM kit (200 µl) NSK-1

\$420 - As part of a 3 - NeuroSamplerTM kit (200 µl of 3) NSK-3

Beta-Gal (Beta-Galactosidase Epitope TAG)

CAT# BGL

About BGL:

Our beta-galactosidase antibody recognizes the LacZ gene product with high titre and high specificity. Since this antibody was generated in chickens, it can be used together with your existing rabbit and mouse primary antibodies for double immunostaining with no secondary antibody cross reactivity. It even works well with fusion proteins of LacZ!

Anti-BGL Antibody:

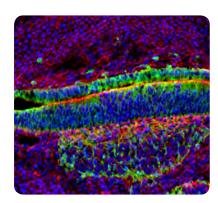
Chickens were immunized with purified B-Galactosidase (lacZ) protein emulsified in Freund's adjuvants. After multiple boosts, eggs were collected from the hens, IgY fractions were prepared from the yolks, and then affinity-purified antibodies were prepared using B-Galactosidase conjugated to an aggrose matrix. The final product is a mixture of both affinity-purified antibodies (25µg/ml) and purified IgY (10 mg/ml), and is filter-sterilized.

laY Concentration:

10 mg/ml (based on absorbance at 280 nm).

Applications:

1:2500-1:5000 for immunohistochemstry and immunocytochemistry using 2% paraformaldehyde-fixed tissues or cells.



LacZ immunoreactivity (green staining) in tissue sections through transgenic embryonic (E18) mouse otic placodes. In these embryos, LacZ is under the control of a gene product that is expressed in these neuronal precursors in the otic vesicle (center of the photomicrograph) and in the cochlear ganglion anlagen (lower third of the photomicrograph). Red staining shows connective tissue; purple staining shows nuclei.

Prices:

\$125 - Individual Vial - (0.1 ml, 10 mg/ml) (Cat# BGL-1010) \$255 - Individual Vial - (0.4 ml, 10 mg/ml) (Cat# BGL-1040)

CAT# TUJ

About Beta-Tubulin III: Human Beta-Tubulin 3 is a 50,432 dalton structural protein (450 amino acid)

expressed in neurons of the PNS and CNS. It contributes to microtubule stability in neuronal cell bodies and axons, and plays a role in axonal transport.

Anti-Beta-Tubulin III Antibodies: Three different antipeptide antibodies were generated in chickens against sequences shared between the rat (AAM28438) and human (AAL28094) gene products. Antibodies were affinity-purified and mixed in equal concentration. These antibodies have been validated with human, mouse and rat tissues.

IgY Concentrations:

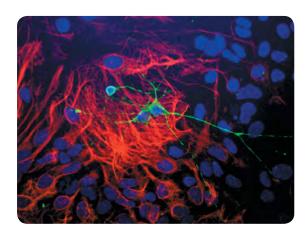
300 μ g/ml in phosphate-buffered isotonic saline (PBS) with 0.02% sodium azide (w/v) as an anti-microbial. Each of the three antipeptide antibodies

constitutes 100 µg/ml.

Applications:

Immunohistochemistry (1:1,000 - 1:2,000 recommended dilution)
Immunocytochemistry (1:1,000 - 1:2,000 recommended dilution)

Westerns (1:2,000 - 1:5,000 recommended dilution)



Dissociated cell culture of a neonatal mouse brain showing Beta-Tubulin III (green staining) of neurons. These cultures were counter-stained with a rabbit anti-GFAP antibody (red staining) to identify astrocytes, and with DAPI (blue staining) to localize nuclei.

Prices: \$399 - Individual Vial - (1000 µl, 300 µg/ml) (Cat# TUJ)

\$250 - 1 - NeuroSamplerTM kit (200 µl) NSK-1

\$420 - As part of a 3 - NeuroSampler kit (200 µl of 3) NSK-3

CAT# CAT

About ChAT:

Murine choline-O-acetyltransferase (EC 2.3.1.6) is a 71,721 dalton protein (640 amino acids) expressed in cholinergic neurons of both the PNS and CNS. In the CNS, ChAT is expressed in motor neurons and pre-ganglionic autonomic neurons of the spinal cord, a subset of neurons in the neostriatum, and in the basal forebrain. In the PNS, ChAT is expressed in a small subpopulation of sympathetic neurons and in all parasympathetic neurons. ChAT is the enzyme responsible for synthesis of acetylcholine from acetyl-coenzyme A and choline.

Anti-ChAT Antibody:

An antipeptide antibody was generated in chickens against a sequence shared between the mouse (Q03059) and human (P28329) gene products. The antibody was affinity-purified and the concentration adjusted to $100 \, \mu \text{g/ml}$. These antibodies have been validated with human, mouse and rat tissues.

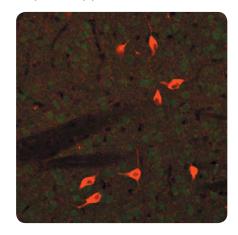
IgY Concentration:

 $100\ \mu\text{g/ml}$ in phosphate-buffered isotonic saline (PBS) with 0.02% sodium azide

(w/v) as an anti-microbial.

Applications:

Immunohistochemistry (1:1,000 - 1:2,000 recommended dilution) Immunocytochemistry (1:1,000 - 1:2,000 recommended dilution)



A tissue section through an adult mouse brain showing ChAT (red staining) in cholinergic neurons of the caudate-putamen nucleus. The pale green staining is autofluorescence of green fluorescent protein (GFP) in this transgenic animal.

Prices:

\$399 – Individual Vial - (1000 µl, 100 µg/ml) (Cat# CAT)

\$250 - 1 - NeuroSampler™ kit (200 µl) NSK-1

CAT# CNP

About CNPase: Murine CNPase (EC 3.1.4.37) is a 47,122 dalton protein (420 amino acids) found in

myelin. This protein is expressed by oligodendrocytes of the CNS and by Schwann

cells of the PNS.

Antibody:

An antipeptide antibody was generated in chickens against a sequence shared

between the mouse (P16330) and human (NP_149124) gene products. The Antibody was affinity-purified and the concentration adjusted to $100 \mu g/ml$. These antibodies

have been validated with human, mouse and rat tissues.

lay Concentration: 100 µg/ml in phosphate-buffered isotonic saline (PBS) with 0.02% sodium azide

(w/v) as an anti-microbial.

Applications: Immunohistochemistry (1:1,000 - 1:2,000 recommended dilution)

Immunocytochemistry (1:1,000 - 1:2,000 recommended dilution)

Westerns (1:2,000 - 1:5,000 recommended dilution)



A tissue section through an adult mouse brain showing CNPase (brown staining) in white matter tracts and the granule cell layer of the cerebellum.

Prices: \$399 - Individual Vial - (1000 µl, 100 µg/ml) (Cat# CNP)

\$250 - 1 - NeuroSampler™ kit (200 µl) NSK-1

\$420 - As part of a 3 - NeuroSamplerTM kit (200 µl of 3) NSK-3

CAT# COR

About Coronin 1a:

Human Coronin 1a is a 51,026 dalton protein (461 amino acids) selectively expressed in cells involved in immune surveillance throughout the body, including activated microglial cells of the CNS. It is a member of the WD40 (tryptophan-aspartate) gene family, which includes the ${\tt B}$ subunit of the trimeric G proteins as the prototype. Its function is presumably in membrane structural reorganization accompanying antigen-presentation.

Anti-Coronin 1a Antibody: An affinity-purified antipeptide antibody was generated in chickens against a sequence shared between the mouse (NP_034028) and human (NP_009005) gene products. The Antibody was affinity-purified and the concentration adjusted to $100 \ \mu g/ml$. These antibodies have been validated with human, mouse and rat tissues.

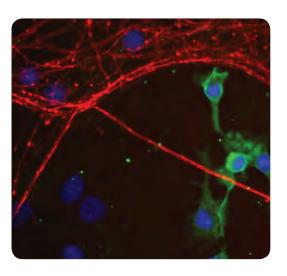
IgY Concentration:

 $100\,\mu\text{g/ml}$ in phosphate-buffered isotonic saline (PBS) with 0.02% sodium azide

(w/v) as an anti-microbial.

Applications:

Immunohistochemistry (1:1,000 - 1:2,000 recommended dilution)
Immunocytochemistry (1:1,000 - 1:2,000 recommended dilution)



Dissociated cell culture from a neonatal mouse brain showing Coronin 1a (green staining) of microglial cells. These cultures were counter-stained with rabbit antibodies against NFM (neurofilament, red staining), a neuronal marker, as well as DAPI (blue staining), a marker of nuclei. Picture courtesy of Dr. Gerry Shaw, University of Florida.

Prices:

\$399 - Individual Vial - (1000 pl, 100 pg/ml) (Cat# COR)

\$250 - 1 - NeuroSamplerTM kit (200 µl) NSK-1

CAT# DCX

About Doublecortin:

Doublecortin is a microtubule-associated protein found in neuroblasts and immature neurons, especially those undergoing embryonic migrations. It was first identified as the X-chromosome encoded gene product mutated in the human diseases Lissencephaly (in males) and Periventricular Heterotopia (in females) –diseases caused by failure of neocortical neuroblast migration. The human protein itself is 360 amino acids (40,044 daltons), and contains doublecortin motifs near its N-terminus, which are believed to mediate the microtubule binding.

Anti-Doublecortin Antibodies: Two antipeptide antibodies were generated in chickens against sequences shared between the mouse (AAT58219.1), rat (NP_445831.3) and human (CAA06617.1) gene products. Antibodies were affinity-purified and then mixed in equal concentrations. These antibodies have been validated with human, mouse and rat tissues.

Species Specificity:

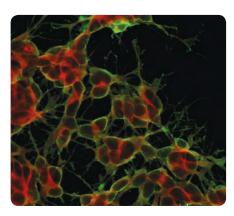
These anti-Doublecortin antibodies recognize the human, mouse and rat homologs of Doublecortin.

IgY Concentrations:

200 ug/ml in phosphate-buffered isotonic saline (PBS) with 0.02% sodium azide (w/v) as an anti-microbial. Both of the antipeptide antibodies constitutes 100 μ g/ml.

Applications:

Immunohistochemistry (1:1,000-1:2,000 recommended dilution) Immunocytochemistry (1:1,000-1:2,000 recommended dilution)



Doublecortin staining (Green) in cultured neuroblastoma cells. The red color is phalloidin-stained filamentous actin.

Prices: \$399 - Individual Vial - (1000 µl, 200 µg/ml) (Cat# DCX)

\$250 - 1 - NeuroSamplerTM kit (200 µl) NSK-1

\$420 – As part of a 3 - NeuroSamplerTM kit (200 µl of 3) NSK-3

CAT# ER1, ER2/3, ER5

About mGluR:

The metabotropic glutamate receptors (mGluR's) represent a gene family of G-protein coupled receptors. These receptors all bind the amino acid glutamate – the major excitatory neurotransmitter of the nervous system – but differ in their primary amino acid structure, their pharmacology, and their distribution in the peripheral and central nervous systems. In general, though, mGluR1 and mGluR5 receptors are post-synaptic and the mGluR2 and mGluR3 receptors are pre-synaptic.

Anti-mGluR: Antibodies: We have 3 different anti-mGluR antibodies, each of which binds to a specific peptide sequence(s) present in different sets of mGluR gene family members. ER1 and ER5 antibodies represent sequences found only in mGluR1 and mGluR5, respectively. ER2/3 antibodies represent sequences found in both mGluR2 and mGluR3 – this product cannot, however, distinguish between these two receptors. These antibody products have been validated for immunohistochemistry and immunocytochemistry using mouse brain sections and cultured neuroblastoma cells, as well as in rat brain sections.

Species Specificity:

All three of these anti-mGluR antibodies recognize peptide sequences that are identical in the human, mouse and rat homologs.

mGluR1 (Cat# ER1):

This reagent consists of a cocktail of 3 different antipeptide antibodies generated against 3 different regions of the mGluR1 gene product not found in the other mGluR gene family members. Total protein concentration is 300 ug/ml in phosphate-buffered isotonic saline (PBS) with 0.02% sodium axide (w/v) as an anti-microbial.

mGluR2/3 (Cat# ER2/3):

This reagent consists of 2 antipeptide antibodies generated against overlapping sequences specific to the mGluR2 and mGluR3 gene products, but not found in other mGluR gene family members. Total protein concentration is 200 ug/ml in phosphate-buffered isotonic saline (PBS) with 0.02% sodium axide (w/v) as an anti-microbial.

mGluR5 (Cat# ER5):

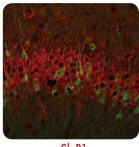
This reagent consists of 2 antipeptide antibodies generated against 2 different regions of the mGluR5 gene product not found in other mGluR gene family members. Total protein concentration is 200 ug/ml in phosphate- buffered isotonic saline (PBS) with 0.02% sodium axide (w/v) as an anti-microbial.

Metabotropic Glutamate Receptors (continued)

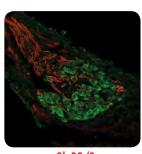
Glutamic Acid Decarboxylase (GAD-67)

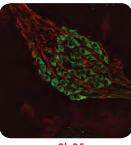
Immunohistochemistry (1:1,000-1:2,000 recommended dilution)

Immunocytochemistry (1:1,000-1:2,000 recommended dilution)



Applications:





mGluR1

mGluR2/3

mGluR5

The green fluorescence is mGluR1 / mGluR2/3 / mGluR5; the red fluorescence is f3-tubulin 3. Note the presence of mGluR1 / mGluR2/3 / mGluR5 immunoreactivity in these primary afferent sensory neurons.

Prices: \$399 - Individual Vial - (1000 µl, 300 µg/ml) (Cat# ER1)

\$250 - 1 - NeuroSamplerTM kit (200 µl) NSK-1

\$420 - As part of a 3 - NeuroSamplerTM kit (200 µl of 3) NSK-3

Prices: \$399 - Individual Vial - (1000 µl, 200 µg/ml) (Cat# ER2/3)

\$250 - 1 - NeuroSamplerTM kit (200 µl) NSK-1

\$420 - As part of a 3 - NeuroSamplerTM kit (200 µl of 3) NSK-3

Prices: \$399 - Individual Vial - (1000 µl, 200 µg/ml) (Cat# ER5)

\$250 - 1 - NeuroSampler™ kit (200 µl) NSK-1

\$420 - As part of a 3 - NeuroSamplerTM kit (200 µl of 3) NSK-3

CAT# GAD

About GAD-67:

Human Glutamic Acid Decarboxylase (GAD-67), [EC 4.1.1.15] is a 66,987 dalton protein (594 amino acids) selectively expressed in a subpopulation of GABAergic neurons of the CNS. It catalyzes the decarboxylation of glutamic acid, forming the inhibitory neurotransmitter β -amino butyric acid (GABA). It is also know as GAD-1.

Anti-GAD-67 Antibody: An affinity-purified antipeptide antibody was generated in chickens against a sequence shared between the mouse (CAA01912) and human (NP_000808) gene products. These antibodies have been validated with human, mouse and rat

tissues.

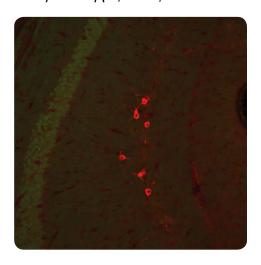
IgY Concentration:

 $100\;\mu\text{g/ml}$ in phosphate-buffered isotonic saline (PBS) with 0.02% sodium azide

(w/v) as an anti-microbial.

Applications:

Immunohistochemistry (1:1,000 - 1:2,000 recommended dilution)
Immunocytochemistry (1:1,000 - 1:2,000 recommended dilution)



A tissue section through an adult mouse brain showing GAD-1 (red staining) in basket cells of the hippocampal formation. Green staining is autofluorescence from green fluorescent protein (GFP) expressed in this transgenic mouse. Picture courtesy of Dr. Felix Eckenstein, University of Vermont.

Prices: \$399 – Individual Vial - (1000 μl, 100 μg/ml) (Cat# GAD)

\$250 - 1 - NeuroSampler™ kit (200 µl) NSK-1

\$420 - As part of a 3 - NeuroSampler™ kit (200 µl of 3) NSK-3

Growth-Associated Protein-43

CAT# GFP

About GFP: Green fluorescent protein is a naturally fluorescent protein originally derived from

jellyfish. GFP has been engineered to produce a vast number of variously colored mutants, fusion proteins, and biosensors which have become useful and ubiquitous tools in transgenic experiments. Fluorescent proteins enable a wide range of applications where they have functioned as cell lineage tracers, reporters of gene

expression, or as a measure of protein-protein interactions.

Anti-GFP Antibody: Chickens were immunized with recombinant green fluorescent protein (GFP)

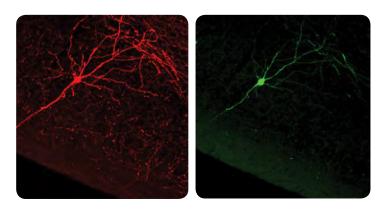
emulsified in Freund's adjuvant. After multiple boosts, eggs were collected from the hens, and IgY fractions were prepared from the yolks. Purified antibody preparations were then mixed with glycerol 1:1 (v/v) (to prevent freezing at

-20°C), augmented with sodium azide, and then filter-sterilized.

IgY Concentration: 10 mg/ml (based on absorbance at 280 nm).

Applications: Immunohistochemstry (1:1000 recommended dilution);

Westerns 1:2500 - 1:5000 (recommended dilution)



Panels show the **same** neuron within a thick section through mouse cerebral cortex. The right panel shows native GFP autofluorescence as the result of GFP protein expression under the control of an actin promoter (green staining). The left panel shows the same cell after fixation and immunostaining with our chicken anti-GFP antibody (red staining)." Note that the signal is much stronger using the chicken anti-GFP antibody.

Price: \$210 - Individual Vial - (0.1 ml, 10.0 mg/ml) (Cat# GFP-1010) \$435 - Individual Vial - (0.4 ml, 10.0 mg/ml) (Cat# GFP-1020)

CAT# GAP43

About GAP-43:

Growth-Associated Protein-43 is a 274 amino acid cytoplasmic protein found in neurons and various other embryonic cell types. This protein also goes by a number of alternative names, including neuromodulin and F1. In cultured neurons, GAP-43 antibodies selectively stains the growth cones of axons. As the substrate for various phosphorylation events, it is believed that GAP-43 plays a critical role in axonal growth, although its exact function is still unclear.

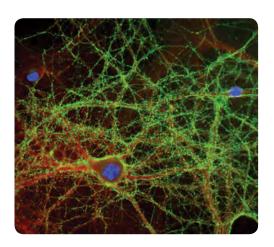
Anti-GAP-43 Antibody: An antipeptide IgY antibody was generated in chickens against a C-terminal sequence shared between the mouse (NP_032109) and rat (NP_05889.1) gene products. These antibodies have been validated with human, mouse and rat tissues.

IgY Concentration:

10 mg/ml of the non-affinity purified IgY fraction in phosphate-buffered saline (PBS) with 0.1% bovine serum albumin (w/v), 50% glycero (v/v), and 0.02% sodium azide (w/v) as an antimicrobial.

Applications:

Immunohistochemistry (1:500 – 1:1,000 recommended dilution)
Immunocytochemistry (1:500 – 1:1,000 recommended dilution)
Westerns (1:1,000 – 1:5,000 recommended dilution)



Cultured mouse cortical neurons. GAP-43 immunostaining is green; alpha-II spectrin is red. Hoechst dye (blue) stains the nuclei of the cells.

Prices: \$245 - Individual Vial - (200 µl, 2.0 mg lgY/ml) (Cat# GAP43)

\$250 - 1 - NeuroSampler™ kit (200 µl) NSK-1

Glial Fibrillary Acidic Protein (GFAP)

CAT# GFAP

About GFAP:

Human GFAP is a 49,749 dalton protein (432 amino acids) expressed by astrocytes of the central nervous system. GFAP is an intermediate filament protein and acts as an intra-cellular structural component of the astrocytic cytoskeleton. During embryonic and fetal life, GFAP is also expressed by radial glial cells of the CNS. Rare mutations of the GFAP gene in humans result in Alexander's disease, one of

the leukodystrophies.

Anti-GFAP Antibody:

Antibodies were prepared by injecting laying hens first with highly purified recombinant human GFAP (produced in bacteria), followed by boosts of native GFAP protein purified from bovine spinal cords. After a series of boosts, eggs were collected from hyperimmunized animals and the IgY fraction prepared. These antibodies have been validated with human, mouse and rat tissues.

IgY Concentration:

2.0 mg lgY/ml in phosphate-buffered isotonic saline (PBS) with 0.02% sodium azide (w/v) as an anti-microbial.

Applications:

Immunohistochemistry (1:2,000 - 1:5,000 recommended dilution) Immunocytochemistry (1:2,000 - 1:5,000 recommended dilution) Westerns (1:5.000 - 1:10.000 recommended dilution)



Dissociated culture of rat cerebral cortical neurons and astrocytes (red staining). The nuclei of some neuronal cells (blue staining) are visible. Picture courtesy of Dr. Gerry Shaw, University of Florida.

\$245 - Individual Vial - (200 µl, 2.0 mg lgY/ml) (Cat# GFAP) Prices:

\$250 - 1 - NeuroSamplerTM kit (200 µl) NSK-1

\$420 - As part of a 3 - NeuroSampler kit (200 µl of 3) NSK-3

6XHIS (His-His-His-His-His TAG)

CAT# HIS-W

About 6XHIS:

Our anti-6XHIS antibody recognizes the 6X-HIS tag with high titre and high specificity in western blots and immunoprecipitation applications.

Anti-6XHIS Antibody:

Chickens were immunized with a synthetic peptide containing the 6X-HIS epitope tag - HHHHHH - conjugated to keyhole limpet hemocyanin (KLH). After multiple boosts, immune eggs were collected from the hens, and the IgY fractions were purified from the yolks. These IgY fractions were then affinity-purified using an agarose matrix to which the cognate peptide was attached. Eluates of this column were dialyzed against PBS, had their concentrations adjusted to 100 ug/ml, and then filter-sterilized.

IgY Concentration:

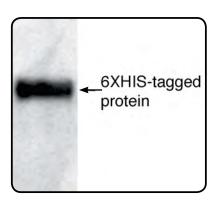
Westerns: 10 mg/ml (based on absorbance at 280 nm);

Immunoprecipitations: 1.0 mg / ml

Applications:

Westerns: (1:5000 - 1:10000 recommended dilution);

Immunoprecipitation: (1:5000-1:10000 for recommended dilution)



6XHIS immunostaining of a western blot showing the presence of a single band at the corresponding molecular weight.

Prices:

6XHIS (Western)

\$150 - Individual Vial - (0.1 ml, 10.0 mg/ml) (Cat# HIS-W-1010) \$335 - Individual Vial - (0.4 ml, 10.0 mg/ml) (Cat# HIS-W-1040)

6XHIS (Immunoprecipitation)

\$335 - Individual Vial - (0.1 ml, 1.0 mg/ml) (Cat# HIS-IP-1010)

CAT# MAC

(MAC-1):

About Integrin Alpha M Integrin Alpha M (also known as MAC-1 and CD11b) is a 1142 amino acid protein expressed in various antigen-presenting cells of the immune system, including microglial cells of the central nervous system. This is the same protein that is recognized by the Ox-42 mouse monoclonal antibody.

Anti-MAC-1 Antibody:

Anti-Integrin Alpha-M (MAC-1) antibody was purified from eggs collected from chickens injected with a KLH-conjugated peptide corresponding to a sequence shared between the mouse (NP_001076429.1) and human gene products (NP_001139280.1). These antibodies have been validated with human, mouse and rat tissues.

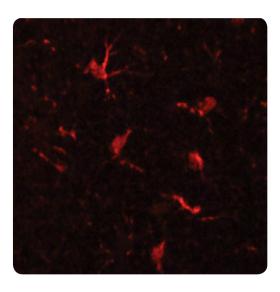
IgY Concentration:

100 ug/ml in phosphate-buffered isotonic saline (PBS) with 0.02% sodium azide

(w/v) as an anti-microbial.

Applications:

Immunohistochemistry (1:2000-1:5000 recommended dilution) Immunocytochemistry (1:2000-1:5000 recommended dilution)



Mac-1 staining of microglial cells in mouse cerebral cortex (red). Photo courtesy of Dr. Felix Eckenstein, University of Vermont.

Prices: \$399 - Individual Vial - (1000 µl, 100 µg/ml) (Cat# MAC)

\$250 - 1 - NeuroSamplerTM kit (200 µl) NSK-1

\$420 - As part of a 3 - NeuroSampler kit (200 µl of 3) NSK-3

CAT# MAP

About MAP-2:

Human MAP-2 is a 199,296 dalton protein (1827 amino acids) expressed in neurons of the PNS and CNS, where it serves as a major component of the neuronal cytoskeleton. MAP-2 contributes to structural integrity and cell shape.

Anti-MAP-2 Antibodies: Two antipeptide antibodies were generated in chickens against sequences shared between the mouse (P20357) and human (NP 002365) gene products. Antibodies were affinity-purified and mixed in equal concentrations. These antibodies have been validated with human, mouse and rat tissues.

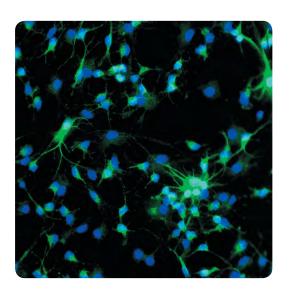
IgY Concentrations:

200 µg/ml in phosphate-buffered isotonic saline (PBS) with 0.02% sodium azide (w/v) as an anti-microbial. Both of the antipeptide antibodies constitutes 100 µg/ml.

Applications:

Immunohistochemistry (1:1,000 - 1:2,000 recommended dilution) Immunocytochemistry (1:1,000 - 1:2,000 recommended dilution)

Westerns (1:2,000 - 1:5,000 recommended dilution)



Dissociated cell cultures of an e13 mouse brain showing MAP-2 (green staining) of neurons. DAPI (blue staining) allows visualization of nuclei.

Prices:

\$399 - Individual Vial - (1000 pl, 200 pg/ml) (Cat# MAP)

\$250 - 1 - NeuroSampler™ kit (200 µl) NSK-1

CAT# MBP

About MBP: Human myelin basic protein (MBP) is a 20,115 dalton protein (186 amino acids)

found in myelin of the CNS and PNS. Expressed as an intracellular protein by oligodendrocytes and Schwann cells, MBP aids in the compaction and stability of

myelin.

Anti-MBP Antibody: An antipeptide antibody was generated in chickens against a sequence shared

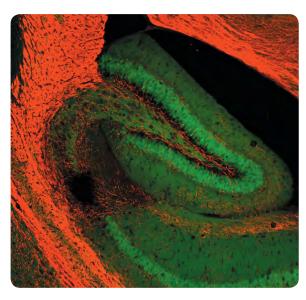
between the mouse (NP_034907) and human (NP_002376) gene products. Antibodies were affinity-purified and the concentration adjusted to 100 µg/ml. These antibodies have been validated with human, mouse and rat tissues.

lgY Concentration: 100 μg/ml in phosphate-buffered isotonic saline (PBS) with 0.02% sodium azide

(w/v) as an anti-microbial.

Applications: Immunohistochemistry (1:1,000 - 1:2,000 recommended dilution)

Immunocytochemistry (1:1,000 - 1:2,000 recommended dilution)



A tissue section through an adult mouse brain showing MBP (red staining) of white matter tracts adjacent to the hippocampal formation. Green staining is autofluorescence from green fluorescent protein (GFP) expressed in this transgenic mouse.

Prices: \$399 - Individual Vial - (1000 µl, 100 µg/ml) (Cat# MBP)

\$250 - 1 - NeuroSampler™ kit (200 µl) NSK-1

\$420 - As part of a 3 - NeuroSamplerTM kit (200 µl of 3) NSK-3

CAT# NES

About Nestin: Mouse nestin is a 206,994 dalton protein (1864 amino acids) expressed in neural

crest cells, CNS neural stems cells, as well as a few non-neural cell types in the embryo, including cells within the pancreatic islets of Langerhans and the limb bud. Nestin is an intermediate filament-associated protein, and contributes to the

cytoskeleton.

Anti-Nestin

Anti-

mouse (NP_057910) gene product. Antibodies were affinity-purified and mixed in equal concentration. These antibodies have been validated with human, mouse and

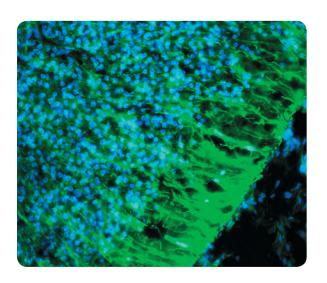
rat tissues.

lgY Concentrations: 300 μg/ml in phosphate-buffered isotonic saline (PBS) with 0.02% sodium azide

(w/v) as an anti-microbial. Each of the three anti peptide antibodies are 100 μ g/ml.

Applications: Immunohistochemistry (1:10,000 - 1:20,000 recommended dilution)
Immunocytochemistry (1:10,000 - 1:20,000 recommended dilution)

Westerns (1:20,000 – 1:50,000 recommended dilution)



A tissue section through an e13 mouse brain showing Nestin (green staining) in neural stem cells of the ventricular zone of the CNS. DAPI (blue staining) allows visualization of nuclei.

Prices: \$399 - Individual Vial - (1000 µl, 300 µg/ml) (Cat# NES)

\$250 - 1 - NeuroSampler™ kit (200 µl) NSK-1

CAT# NET

About Netrin-1: Murine netrin-1 precursor is a 67,768 dalton protein (604 amino acids) expressed

by subpopulations of cells within the developing CNS, as well as in various nonneural tissues, including the gut, liver, heart, and prostate. In the embryonic CNS, netrin-1 is expressed by cells of the floor plate, and acts to attract axons of "commissural neurons" from the dorsal horn gray matter. Netrin-1 is also believed

to play a role in the growth of motor axons in the PNS.

Anti-Netrin-1 An antipeptide antibody was generated in chickens against a sequence shared between the mouse (009118) and human (095631) gene products. Antibodies

between the mouse (009118) and human (095631) gene products. Antibodies were affinity-purified and the concentration adjusted to 100 $\mu g/ml$. These

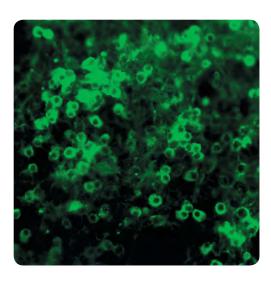
antibodies have been validated with human, mouse and rat tissues.

lqY Concentration: 100 µg/ml in phosphate-buffered isotonic saline (PBS) with 0.02% sodium azide

(w/v) as an anti-microbial.

Applications: Immunohistochemistry (1:1,000 - 1:2,000 recommended dilution)

Immunocytochemistry (1:1,000 - 1:2,000 recommended dilution)



Dissociated cell cultures of an e13 mouse brain showing Netrin-1 (green staining) in neuronal precursor cells.

Prices: \$399 - Individual Vial - (1000 µl, 100 µg/ml) (Cat# NET)

\$250 - 1 - NeuroSamplerTM kit (200 µl) NSK-1

\$420 - As part of a 3 - NeuroSamplerTM kit (200 µl of 3) NSK-3

CAT# NUN

About Neu-N (Fox 3):

Human Neu-N (Fox 3) is a 33,873 dalton (312 amino acid) RNA-binding protein. This protein is found in the nuclei of virtually all post-mitotic central and peripheral neurons, and has been used extensively as a general neuronal marker. In these studies, Neu-N (Fox 3) stains neuronal nuclei relatively uniformly, except in the region of the nucleolus, providing a distinctive donut (i.e., torus) shape. Since this antigen is *not* seen in the cytoplasm, it offers the advantage of being useful in co-immunostaining studies with rabbit and mouse antibodies against various cytoplasmic neuronal antigens.

Anti-Neu-N (Fox 3)
Antibody:

Antipeptide antibody was purified from eggs collected from chickens injected with a KLH-conjugated peptide corresponding to a sequence shared between the mouse (NP_001020102) and human (NP_001076044) gene products. These antibodies have been validated with human, mouse and rat tissues.

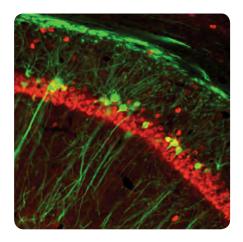
IgY Concentration:

100 ug/ml in phosphate-buffered isotonic saline (PBS) with 50% glycerol (v/v) and

0.02% sodium azide (w/v) as an anti-microbial.

Applications:

Immunohistochemistry (1:2,000-1:5,000 recommended dilution)
Immunocytochemistry (1:2,000-1:5,000 recommended dilution)



CA1 region of a transgenic mouse expressing the eGFP gene product under control of the Thy-1 promoter. Green is eGFP autofluorescence; Red is Cy-3 secondary antibody labeling chicken anti-Neu-N (Fox-3) positive neuronal nuclei. Picture courtesy of Dr. Felix Eckenstein, University of Vermont.

Prices:

\$399 – Individual Vial - (1000 µl, 100 µg/ml) (Cat# NUN)

\$250 - 1 - NeuroSampler™ kit (200 µl) NSK-1

\$420 – As part of a 3 - NeuroSampler™ kit (200 µl of 3) NSK-3

CAT# NFH

About NFH: Human Neurofilament Heavy Chain (NFH) is a 115,378 dalton protein (1072 amino

acids) that forms part of the neuronal cytoskeleton. NFH is physically associated with 10 nm intermediate filaments, and is said to be one of the "neurofilament triplet" proteins, although it probably serves more to stabilize the cytoskeleton, rather than as an integral structural component. NFH immunoreactivity is found in neuronal somata, dendrites and

axons.

Anti-NFH
Antibody:

NFH protein was purified from bovine spinal cords following the method of Delacourte et al. ["Study of the 10-nm-filament fraction isolated during the standard microtubule

et al. ["Study of the 10-nm-filament fraction isolated during the standard microtubule prepartion" (1980). Biochem. J. 191(2): 543-546], followed by Prepcell purification (Bio-Rad). Antibodies were prepared by injecting purified NFH protein into laying hens, and purifying the IgY fraction from eggs collected from hyper-immunized hens.

These antibodies have been validated with human, mouse and rat tissues.

lgY Concentration: 1.0 mg lgY/ml in phosphate-buffered isotonic saline (PBS) with 0.02% sodium azide

(w/v) as an anti-microbial.

Applications: Immunohistochemistry (1:2,000 - 1:5,000 recommended dilution)

Immunocytochemistry (1:2,000 - 1:5,000 recommended dilution)

Westerns (1:5,000 - 1:10,000 recommended dilution)



Dissociated cell culture prepared from an adult rat brain. NF-H (green staining) can be found within the neuronal cell body and in the neurites. Picture courtesy of Dr. Gerry Shaw (University of Florida).

Prices: \$245 - Individual Vial - (200 µl, 1.0 mg IgY/ml) (Cat# NFH)

\$250 - 1 - NeuroSampler™ kit (200 µl) NSK-1

\$420 - As part of a 3 - NeuroSamplerTM kit (200 µl of 3) NSK-3

CAT# NFL

About NFL: Human neurofilament light chain (NFL) is a 61,516 dalton protein (543 amino acids)

expressed in the axons of CNS and PNS neurons, where it plays a role in maintaining the structural integrity of the axon. Mutations of the NFL gene product are responsible for some forms of autosomal dominant Charcot-Marie-Tooth neuropathies in humans

(i.e., CMT type 1F).

Anti-NFL
Antibodies:
Three antipoptide antibodies were generated in chickens against sequences shared between the mouse (P08551) and human (P07196) gene products. Antibodies were

affinity-purified and mixed in equal concentrations. These antibodies have been

validated with human, mouse and rat tissues.

lgY Concentrations: 300 µg/ml in phosphate-buffered isotonic saline (PBS) with 0.02% sodium azide

(w/v) as an anti-microbial. Each of the three antipeptide antibodies constitutes 100 μ g/ml.

Applications: Immunohistochemistry (1:1,000 - 1:2,000 recommended dilution)

Immunocytochemistry (1:1.000 - 1:2.000 recommended dilution)



Tissue section through an adult mouse brain showing NFL (brown staining) of axons in the white matter of the cerebellum.

Prices: \$399 – Individual Vial - (1000 µl, 300 µg/ml) (Cat# NFL)

\$250 - 1 - NeuroSampler™ kit (200 µl) NSK-1

CAT# NFM

About NFM:

Human Neurofilament Medium Chain (NFM) is a 102,448 dalton protein (916 amino acids) expressed in CNS and PNS neurons. This cytoskeletal protein is normally phosphorylated in vivo, and its extent of phosphorylation correlates with different states of axonal growth and stabilization. These observations have led to the hypothesis that the NFM protein cross-links adjacent neurofilament strands, and contributes to the structural integrity of the axon.

Anti-NFM Antibody:

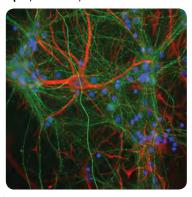
NFM protein was purified from bovine spinal cords following the method of Delacourte et al. ["Study of the 10-nm-filament fraction isolated during the standard microtubule prepartion" (1980). Biochem. J. 191(2): 543-546], followed by Prepcell purification (Bio-Rad). Antibodies were prepared by injecting purified NFM protein into laying hens, and purifying the IgY fraction from eggs collected from hyper-immunized hens. After several boosts, hens were co-boosted with recombinant NFM protein expressed in bacteria. These antibodies have been validated with human, mouse and rat tissues.

IgY Concentration:

2.0 mg lgY/ml in phosphate-buffered isotonic saline (PBS) with 0.02% sodium azide (w/v) as an anti-microbial.

Applications:

Immunohistochemistry (1:2,000 - 1:5,000 recommended dilution)
Immunocytochemistry (1:2,000 - 1:5,000 recommended dilution)
Westerns (1:5,000 - 1:10,000 recommended dilution)



Dissociated cell culture prepared from an adult rat brain. NFM (green staining) stains neurites in a punctate fashion, corresponding to neuritic varicosities. As a control, rabbit GFAP antibodies were used to costain astrocytes, producing a red fluorescence. Blue nuclei demonstrate DAPI DNA staining. Picture courtesy of Dr. Gerry Shaw, University of Florida.

Prices: \$245 - Individual Vial - (200 µl, 2.0 lgY/ml) (Cat# NFM)

\$250 - 1 - NeuroSampler™ kit (200 µl) NSK-1

\$420 - As part of a 3 - NeuroSamplerTM kit (200 µl of 3) NSK-3

CAT# NSE

About NSE:

Human Neuron-Specific Enolase Type 2 (EC 4.2.1.11) is a 47,138 dalton protein (434 amino acids) expressed in neurons of the peripheral nervous system (PNS) and central nervous system (CNS). NSE-2 catalyzes the conversion of 2-phospho-D-glycerate into phosphoenol pyruvate, and is an essential enzyme in energy metabolism in nervous tissues.

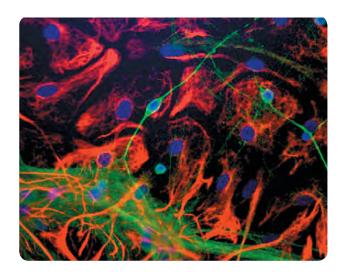
Anti-NSE Antibodies: Two antipeptide antibodies were generated in chickens against a sequence shared between the rat (AAA41119) and human (NP_001966) gene products. Antibodies were affinity-purified and mixed in equal concentrations. These antibodies have been validated with human, mouse and rat tissues.

IgY Concentrations:

200 μ g/ml in phosphate-buffered isotonic saline (PBS) with 0.02% sodium azide (w/v) as an anti-microbial. Both of the antipeptide antibodies constitutes 100 μ g/ml.

Applications:

Immunohistochemistry (1:2,000 - 1:5,000 recommended dilution)
Immunocytochemistry (1:2,000 - 1:5,000 recommended dilution)
Westerns (1:5,000 - 1:10,000 recommended dilution)



Dissociated cell cultures of neonatal mouse brains, showing NSE-2 (green staining) in neurons. These cultures were counter-stained with a rabbit anti-GFAP to localize astrocytes, as well as with DAPI (blue staining) to localize nuclei.

Prices:

\$399 - Individual Vial - (1000 µl, 200 µg/ml) (Cat# NSE)

\$250 - 1 - NeuroSampler™ kit (200 µl) NSK-1

\$420 - As part of a 3 - NeuroSampler™ kit (200 µl of 3) NSK-3

CAT# PAP

About PAP:

Mouse Prostatic Acid Phosphatase (PAP) is a 43,698 dalton protein (381 amino acids; NCBI accession number AAF23171) associated with prostatic cancer cells, as well as primary afferent sensory neurons involved in the pain pathway. This protein is an enzyme that dephosphorylates adenosine monophosphate (AMP) in the dorsal horn gray matter of the spinal cord, generating free adenosine. Injections of PAP into the dorsal horn of experimental mice has been shown to decrease pain perception by acting in an antinociceptive, antihyperalgesic, and antiallodynic fashion.

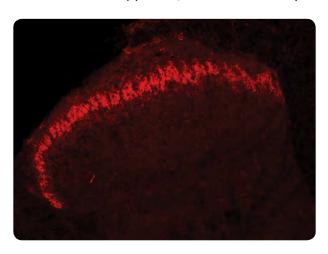
Anti-PAP Antibody: Recombinant mouse PAP protein was expressed in bacteria. Antibodies against this protein were prepared by injecting purified recombinant PAP into laying hens, and purifying the IgY fraction from eggs collected from hyper-immunized hens. These antibodies have been validated with human, mouse and rat tissues.

IgY Concentration:

This antibody preparation contains the "IgY fraction" (10 mg/ml) in phosphate buffered (10 mM, pH 7.2) isotonic (0.9% w/v) saline spiked with 20 μ g/ml of the affinity purified antibody. This preparation also contains 50% (v/v) glycerol, and 0.02% sodium azide (w/v), as an-antimicrobial.

Applications:

Immunohistochemistry (1:500-1:1,000 recommended dilution)



Tissue section through an adult mouse brain showing PAP (red fluorescence) in the superficial laminae of the adult mouse spinal cord dorsal horn gray matter.

Prices: \$245 - Individual Vial - (200 µl, 10 mg lgY/ml) (Cat# PAP)

\$250 - 1 - NeuroSamplerTM kit (200 µl) NSK-1

\$420 - As part of a 3 - NeuroSamplerTM kit (200 µl of 3) NSK-3

CAT# PER

About PER:

Human Perpherin is a 53,651 dalton protein (470 amino acids) expressed in all PNS neurons and some CNS neurons, including a subset of cortical neurons, hippocampal neurons, and ventral horn spinal cord motor neurons. At an ultrastructural level, peripherin immunoreactivity is associated with the neurofilament portion of the cytoskeleton, being particularly abundant in the cell body. Peripherin protein has been shown to undergo upregulation during periods of trophic stress in cultured neurons, and mutations of the peripherin gene have been associated with the neurodegenerative disease amyotrophic lateral sclerosis.

Anti-PER Antibody:

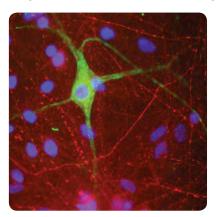
Full length recombinant peripherin was injected into laying hens, and then the IgY fraction was purified from hyperimmunized animals. These antibodies have been validated with human, mouse and rat tissues.

IgY Concentration:

2.0 mg lgY/ml in phosphate-buffered isotonic saline (PBS) with 0.02% sodium azide (w/v) as an anti-microbial.

Applications:

Immunohistochemistry (1:2,000 - 1:5,000 recommended dilution) Immunocytochemistry (1:2,000 - 1:5,000 recommended dilution) Westerns (1:5,000 - 1:10,000 recommended dilution)



Dissociated cell culture prepared from neonatal dorsal root ganglia. Peripherin (green) stains neuronal cell bodies. As controls, rabbit NFL antibodies (red) were used to costain neurites, and DAPI (blue) was used to demonstrate nuclei. Picture courtesy of Dr. Gerry Shaw, University of Florida.

Prices:

\$245 - Individual Vial - (200 µl, 2.0 mg lgY/ml) (Cat# PER)

\$250 - 1 - NeuroSampler™ kit (200 µl) NSK-1

\$420 – As part of a 3 - NeuroSampler™ kit (200 µl of 3) NSK-3

CAT# PLP

About PLP: Human Proteolipid Protein (PLP, also known as lipophilin) is a 29,946 dalton

protein (277 amino acids) found in myelin of the CNS and PNS. Expressed by oligodendrocytes and Schwann cells, PLP stabilizes myelin by preventing lipid bilayer fusion, and aids in its compaction. Different mutations of the human PLP gene product result in two neurological disorders – Pelizaeus-Merzbacher disease and

Spastic Paraplegia type 2.

Anti-PLP Antibody: An antipeptide antibody was generated in chickens against a sequence shared

between the mouse (P60202) and human (NP_000524) gene products. Antibodies were affinity-purified and the concentration adjusted to 100 μ g/ml. These antibodies

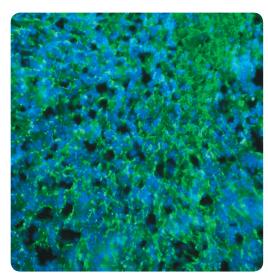
have been validated with human, mouse and rat tissues.

lgY Concentration: 100 μg/ml in phosphate-buffered isotonic saline (PBS) with 0.02% sodium azide

(w/v) as an anti-microbial.

Applications: Immunohistochemistry (1:1,000 - 1:2,000 recommended dilution)

Immunocytochemistry (1:1,000 - 1:2,000 recommended dilution)



In this tissue section through an e13 mouse brain, PLP (green staining) can be seen in immature oligodendrocytes of white matter tracts. DAPI (blue staining) allows visualization of nuclei.

Prices: \$399 - Individual Vial - (1000 µl, 100 µg/ml) (Cat# PLP)

\$250 - 1 - NeuroSamplerTM kit (200 µl) NSK-1

\$420 – As part of a 3 - NeuroSamplerTM kit (200 µl of 3) NSK-3

CAT# PRN

About PRN:

Prion protein is a ubiquitously-expressed, 27661 dalton protein (253 amino acids, NP_898902.1) of unclear function(s) in eukaryotes. This protein can exist in one of two conformational forms. One is its normally-folded form (PrPc or "cellular PrP"), which contains a mixture of alpha helical regions and a few beta-pleated sheets. The other is a misfolded form (PrPsc or "scrapie PrP"), whose structure contains mostly beta-pleated sheets. This misfolded scrapie PrP form is both cytotoxic, especially to nervous tissue, and it can serve as a "seed," inducing adjacent, normally-folded PrP proteins to misfold into the cytotoxic conformation. In this sense, the scrapie PrP can be thought of an infectious agent – both within the organism, as well between organisms.

Anti-PRN Antibody:

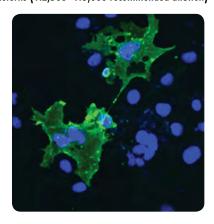
Antibodies were prepared by injecting laying hens with purified recombinant human PRN protein. After a series of boosts, eggs were collected from hyperimmunized aniamsl and the IgY fraction prepared. Affinity purified antibodies were then isolated from the IgY fraction using a PRN protein column. Finally, affinity purified antibodies were mixed with the IgY fraction to make the final product. These antibodies have been validated with human, mouse and rat tissues.

IgY Concentration:

This antibody preparation contains the "IgY fraction" (10 mg/ml) in phosphate buffered (10 mM, pH 7.2) isotonic (0.9% w/v) saline spiked with 25 ug/ml of the affinity purified antibody. This preparation also contains 50% (v/v) glycerol, and 0.02% sodium azide (w/v), as an-antimicrobial.

Applications:

Immunohistochemistry (1:1,000 - 1:2,000 recommended dilution)
Immunocytochemistry (1:1,000 - 1:2,000 recommended dilution)
Westerns (1:2,500 - :15,000 recommended dilution)



Prices: \$245 - Individual Vial - (200 µl, 10 mg/ml (Cat# PRN)

\$250 - 1 - NeuroSampler™ kit (200 µl) NSK-1

CAT# PZO

About Po: Human Myelin Protein Zero (Po) is a 28,400 dalton protein (258 amino acids) found

in myelin of the PNS, but not the CNS. Expressed in myelinating Schwann cells, Po serves as a homophilic adhesion molecule, allowing adjacent laminae of the myelin sheath to undergo compaction. Po is also a marker of a subpopulation of migrating neural crest cells. Mutations of the MPZ gene product in humans is responsible for

Charcot-Marie-Tooth type 1B neuropathies (HMSN1B).

Anti-Po Antibodies: Two antipeptide antibodies were generated in chickens against sequences shared

between the mouse (NP_032649) and human (NP_000521) gene products.

Antibodies were affinity-purified and mixed in equal concentrations. These antibodies

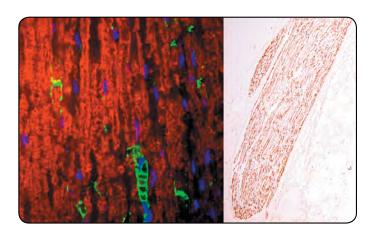
have been validated with human, mouse and rat tissues.

lgY Concentrations: 200 μg/ml in phosphate-buffered isotonic saline (PBS) with 0.02% sodium azide

(w/v) as an anti-microbial. Both of the antipeptide antibodies constitutes 100 μ g/ml.

Applications: Immunohistochemistry (1:1,000 - 1:2,000 recommended dilution)

Immunocytochemistry (1:1,000 - 1:2,000 recommended dilution)



In the left panel (a tissue section through an adult sciatic nerve), Po (green staining) can be seen in the myelin and Schwann cell processes surrounding the nodes of Ranvier. In this photomicrograph, rabbit antibodies against LAMP (lysozome-associated membrane glycoprotein) (red staining) serves as the counterstain, and DAPI (blue staining) allows visualization of nuclei. In the right panel (a lower power tissue section through an adult sciatic nerve), Po (brown staining) can be seen in all of the myelinating Schwann cells.

Prices: \$399 - Individual Vial - (1000 µl, 200 µg/ml) (Cat# PZO)

\$250 - 1 - NeuroSamplerTM kit (200 µl) NSK-1

\$420 - As part of a 3 - NeuroSamplerTM kit (200 µl of 3) NSK-3

CAT# STG

About Synaptotagmin:

Human Synaptotagmin-1 is a 47,442 dalton protein (422 amino acids) associated with pre-synaptic terminals of the PNS and CNS. Synaptotagmin-1 binds calcium and initiates the fusion of vesicles with the pre-synaptic membrane. This protein is also believed to be the target of proteolytic activity associated with Botulinum neurotoxin A.

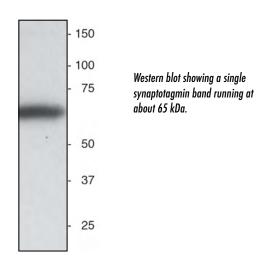
Anti-Synaptotagmin Antibodies: Four different antipeptide antibodies were generated in chickens against sequences shared between the mouse (NP_033332) and human (NP_005630) gene products. Antibodies were affinity-purified and mixed in equal concentrations. These antibodies have been validated with human, mouse and rat tissues.

laY Concentration:

400 μ g/ml in phosphate-buffered isotonic saline (PBS) with 0.02% sodium azide (w/v) as an anti-microbial. Each of the four antipeptide antibodies constitutes 100 μ g/ml.

Applications:

Immunohistochemistry (1:1,000 - 1:2,000 recommended dilution)
Immunocytochemistry (1:1,000 - 1:2,000 recommended dilution)
Westerns (1:2,000 - 1:5,000 recommended dilution)



Prices: \$399 - Individual Vial - (1000 µl, 400 µg/ml) (Cat# STG)

\$250 - 1 - NeuroSampler™ kit (200 µl) NSK-1

CAT# TAU

About Tau:

Human Tau protein (a.k.a., "microtubule-associated protein tau isoform 1") is a 78,902 dalton protein (758 amino acids) expressed in cortical neurons of the CNS. In normal individuals, tau contains moderate degrees of phosphorylation on various serine and threonine residues scattered throughout the N-terminal half of this protein. However in various neurodegenerative diseases, such as Alzheimer's disease, Tau becomes hyperphosphorylated on these residues, leading to the pathological formation of intracellular "neurofibrillary tangles." Such tangles are hallmarks of Alzheimer's disease, as well as various other neurodegenerative diseases, collectively known as the "tauopathies."

Anti-Tau Antibodies:

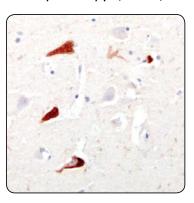
Antipeptide antibodies were generated in chickens against two sequences shared between the mouse (P10637.3) and human (P10636.5) gene products. Neither of these sequences contain phosphorylated serine or threonine residues, so these tau antibodies recognize both the euphosphorylated and hyperphosphorylated forms of tau. Antibodies were affinity-purified from lgY fractions prepared from yolks collected from hyperimmunized hens. These antibodies have been validated with human, mouse and rat tissues.

IgY Concentration:

200 μ g/ml (100 μ g/ml of each antibody) in phosphate-buffered isotonic saline (PBS) with 0.02% sodium azide (w/v) as an anti-microbial.

Applications:

Immunohistochemistry (1:1,000 - 1:2,000 recommended dilution)
Immunocytochemistry (1:1,000 - 1:2,000 recommended dilution)



Tissue section through the hippocampus of a patient diagnosed with Alzheimer's disease. Note the high concentrations of intracellular tau immunoreactivity in pyamidal neurons (brown reaction product), as well as lower concentrations of reaction product in the neuropil. The slide was counterstained with hemotoxylin. Picture courtesy of Dr. Randy Woltjer, Oregon Health & Sciences University.

Prices: \$399 – Individual Vial - (1000 μl, 200 μg/ml) (Cat# TAU)

\$250 - 1 - NeuroSamplerTM kit (200 µl) NSK-1

\$420 - As part of a 3 - NeuroSamplerTM kit (200 µl of 3) NSK-3

CAT# TYH

About TYH:

Human TYH (EC 1.14.16.2) is a 58,523 dalton protein (528 amino acids) responsible for the enzymatic conversion of L-tyrosine to L-DOPA (dihydroxyphenylalanine). This enzyme is expressed in all catecholaminergic neurons of the CNS and PNS. In the CNS, TYH-positive neurons can be found within the substantia nigra, ventral tegmental area, locus ceruleus, and hypothalamus. In the PNS, TYH-positive neurons can be found within the sympathetic chain, pre-vertebral ganglia and the adrenal medulla.

Anti-TYH Antibodies:

Two antipeptide antibodies were generated in chickens against sequences shared between the mouse (P24529) and human (P07101) gene products. Antibodies were affinity-purified and then mixed in equal concentrations. These antibodies have been validated with human, mouse and rat tissues.

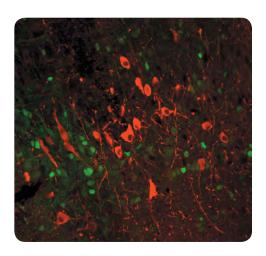
IgY Concentrations:

200 µg/ml in phosphate-buffered isotonic saline (PBS) with 0.02% sodium azide (w/v)

as an anti-microbial. Both of the antipeptide antibodies constitutes 100 µg/ml.

Applications:

Immunohistochemistry (1:1,000 - 1:2,000 recommended dilution)
Immunocytochemistry (1:1,000 - 1:2,000 recommended dilution)



Tissue section through an adult mouse brain showing TYH (red staining) in catecholaminergic neurons of the substantia nigra (pars compacta). The green staining is the autofluorescence of green fluorescent protein (GFP) in neurons in this transgenic animal.

Prices:

\$399 - Individual Vial - (1000 µl, 200 µg/ml (Cat# TYH)

\$250 - 1 - NeuroSampler™ kit (200 µl) NSK-1

CAT# LNC1

About LNC1/
Tyrosine Hydroxylase:

Tyrosine Hydroxylase (TH) is the rate-limiting enzyme in the synthesis of the catecholamine neurotransmitters dopamine, epinephrine, and norepinephrine and is responsible for converting L-tyrosine to L-dopa. In humans four TH mRNA splice variants (hTH1-hTH4) have been isolated while subprimate species rely on a single form of TH. It is known that the hTH1-hTH4 variants are identical in their catalytic domain but differ in their N-terminal regulatory domains. The role of TH in the synthesis of catecholamine neurotransmitters suggests a connection between the enzyme and a number of neuropathogenic diseases characterized by irregular catecholamine levels, such as Parkinson's disease, schizophrenia, and dystonia, as well as a variety of cardiovascular diseases. LNC1 reacts with the catalytic domain of TH and thus with all four isoforms of human TH.

LNC1/Anti-TH Antibody:

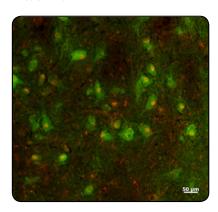
Mouse monoclonal IgG1 ascites fluid produced from mice injected with TH purified from PC12 cells.

IgG Concentration:

1mg/ml

Applications:

Immunocytochemistry Immunohistochemistry Immunoprecipitation, Western Blot



Double-labeled fluorescence immunohistochemistry of human midbrain dopamine neurons stained green with LNC1 and red with PitX.

Prices: \$329 - 100ul Individual Vial, 100ug (Cat# LNC1)

\$109 - 20ul Sampler Size, 20ug (CAT# LNC1-S)

\$329 – 100ul Individual Vial Purified, 100ug (Cat# LNC1-P) \$109 – 20ul Sampler Size Purified, 20ug (CAT# LNC1-PS)

CAT# VIM

About Vimentin:

Human vimentin is a 53,521 dalton protein (466 amino acids) expressed in many cell types of mesodermal origin, and is one of the intermediate filament types that form the cytoskeleton. In the embryonic nervous system, however, vimentin is expressed by migrating neural crest cells forming the PNS, and by neural stem cells of the CNS. In some forms of glioblastoma, vimenin is reexpressed by the tumor cells and serves as a general indicator of their undifferentiated state.

Anti-Vimentin Antibodies: Three different antipeptide antibodies were generated in chickens against sequences shared between the mouse (NP_035831) and human (NP_003371) gene products. Antibodies were affinity-purified and mixed in equal concentrations. These antibodies have been validated with human, mouse and rat tissues.

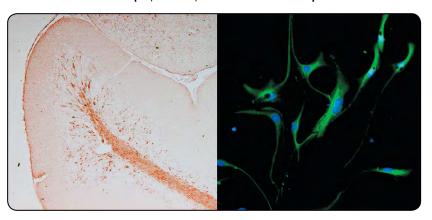
IgY Concentrations:

300 μ g/ml in phosphate-buffered isotonic saline (PBS) with 0.02% sodium azide (w/v) as an anti-microbial. Each of the three antipeptide antibodies constitutes 100 μ g/ml.

Applications:

Immunohistochemistry (1:1,000 - 1:2,000 recommended dilution)
Immunocytochemistry (1:1,000 - 1:2,000 recommended dilution)

Westerns (1:2,000 - 1:5,000 recommended dilution)



In the left panel (a tissue section through an e18 mouse cerebellum), vimentin (brown staining) can be seen in immature astrocytes of the white matter, as well as in vascular endothelial cells. In the right panel (cultured dissociated cells from an e13 mouse brain), vimentin (green staining) can be seen forming the cytoskeleton of immature astrocyte progenitor cells. DAPI (blue staining) allows visualization of nuclei.

Prices:

\$399 – Individual Vial - (1000 µl, 300 µg/ml) (Cat# VIM)

\$250 - 1 - NeuroSampler™ kit (200 µl) NSK-1

Epitope Tag Antibodies

Neural Marker antibodies are sold in three types of packages:

Individual Aliquot: 1.0 ml of antibody

Price: \$399

1-Neural Sampler™ Kit: I One 200 µl vial of one Neural Marker Antibody (Cat# NSK-1)

Price: \$250 One 50 µl vial of Secondary Antibody (see box below)

■ 1.0 mls of BlokHenTM blocking reagent

3-Neural Sampler™ Kit: I Three 200 µl vials of any combination of Neural Marker Antibodies (Cat# NSK-3)

Price: \$420 Three 50 µl vials of any combination of Secondary Antibodies (see box below)

■ 3.0 mls of BlokHenTM blocking reagent

Secondary Unlabeled goat anti-chicken IgY (Cat# U-1010)
Antibodies: HRP-labeled goat anti-chicken IgY (Cat# H-1004)

Fluorescein-labeled goat anti-chicken IgY (Cat# F-1005)

Biotin-labeled goat anti-chicken IgY (Cat# B-1005)

Alkaline Phosphatase Goat Anti-Chicken IgY (Cat# AP-1001)

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▼ Anti-HA (Hemagglutinin) Epitope TAG Antibody	1.0 ml, 0.1 mg/ml	Cat# ET-HA100	\$255
▼ Anti-C-MYC Epitope TAG Antibody	1.0 ml, 0.1 mg/ml	Cat# ET-MY100	\$255
▼ Anti-DYKDDDDK Epitope TAG Antibody	1.0 ml, 0.1 mg/ml	Cat# ET-DY100	\$255

Immunoprecipitation & Blocking Reagents

▼ PrecipHen™ (Agarose-coupled Goat Anti-Chicken) 2.0 ml Cat# P-1010 \$359

Agarose-conjugated goat anti-chicken IgY designed for use in immunoprecipitation applications. A bed volume
of 2.0 mls in a total volume of 4.0 mls with PPS containing 0.02% codium gride.

of 2.0 mLs in a total volume of 4.0 mLs with PBS containing 0.02% sodium azide.

▼ BlokHen™ (Blocking Reagent) 100 ml Cat# BH-1001 \$190

Our proprietary blocking reagent, BlokHen® is a fish serum-based immunoreagent designed for use with chicken antibodies. It already contains concentrated buffer and non-ionic detergent (tween-20), allowing simple dilution with water. BlokHen® can be used in Western Blots, Immunohistochemistry or Immunocytochemistry, Immunoprecipitation, or ELISA applications.

Secondary Antibodies

■ Chicken Anti-Goat IgG-Unlabeled	1000 µl, 1.0 mg/ml	Cat# IGU-1010	\$99
■ HRP-labeled Chicken Anti-Goat IgG	1000 µl, 1.0 mg/ml	Cat# IGH-1010	\$149
■ Fluorescein-labeled Chicken Anti-Goat IgG	1000 µl, 1.0 mg/ml	Cat# IGF-1010	\$110
■ Chicken Anti-Human lgG-Unlabeled	1000 µl, 1.0 mg/ml	Cat# IHU-1010	\$99
■ HRP-labeled Chicken Anti-Human lgG	1000 µl, 1.0 mg/ml	Cat# IHH-1010	\$149
■ Fluorescein-labeled Chicken Anti-Human IgG	1000 µl, 1.0 mg/ml	Cat# IHF-1010	\$115
■ HRP-labeled Chicken Anti-Mouse lgG	1000 µl, 1.0 mg/ml	Cat# IMH-1010	\$145
■ Fluorescein-labeled Chicken Anti-Mouse IgG	1000 µl, 1.0 mg/ml	Cat# IMF-1010	\$115
■ Chicken Anti-Rabbit lgG-Unlabeled	1000 µl, 1.0 mg/ml	Cat# IRU-1010	\$99
■ HRP-labeled Chicken Anti-Rabbit lgG	1000 µl, 1.0 mg/ml	Cat# IRH-1010	\$149
■ Fluorescein-labeled Chicken Anti-Rabbit IgG	1000 µl, 1.0 mg/ml	Cat# IRF-1010	\$115

▼ Alkaline Phosphatase Goat Anti-Chicken IgY	1000 µl, 0.1 mg/ml	Cat# AP-1001	\$125
▼ Biotin-labeled Goat Anti-Chicken IgY (heavy & light chains)	500 μl, 1.0 mg/ml	Cat# B-1005	\$180
▼ Fluorescein Goat Anti-Chicken IgY	500 μl, 1.0 mg/ml	Cat# F-1005	\$109
▼ Horseradish Peroxidase Goat Anti-Chicken IgY	400 µl, 1.0 mg/ml	Cat# H-1004	\$149
▼ Non-Immune Chicken IgY	1.0 ml, 10.0 mg/ml	Cat# N-1010	\$85
▼ Unlabeled Goat Anti-Chicken IgY	1000 µl, 1.0 mg/ml	Cat# U-1010	\$99

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(4) Either purchase order (PO) number or credit card information, including expiration date and name on the card.

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