

NEUROSCIENCE PRODUCT GUIDE

A decorative graphic on the left side of the page features a collection of colored circles in shades of blue, green, orange, red, and cyan. Interspersed among these circles are several circular inset images showing various biological structures, including neurons with green and red staining, a pink-stained histological section, and other cellular structures.

biotechne®

LIFE SCIENCE BRANDS

R&D systems

 **NOVUS**
BIOLOGICALS

TOCRIS

proteinsimple®

Bio-Techne® offers a broad range of high-quality products for studying all areas of neuroscience, from neural stem cells to neurodegenerative diseases. This product guide presents innovative research tools that can help propel your research to the next level.

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PROTEINS

ANTIBODIES

ELISAs

MULTIANALYTE

SMALL MOLECULES

NEURAL STEM CELLS

Introducing Bio-Techne

Bio-Techne is a new trade name that brings together our major brands. We offer the widest selection of high-quality reagents and instruments for the life science and diagnostic markets. Our new name was born by combining two Greek words: “bios,” which means life, and “techne,” which means applying knowledge to solve problems. This name represents our mission, which is to provide the life sciences community with innovative high-quality scientific tools to better understand biological processes and drive discovery.

Our Brands

The Bio-Techne brands and product lines are some of the most referenced in the life sciences industry and include R&D Systems, Novus Biologicals™, Tocris Bioscience, and ProteinSimple®. We have brought these brands together as Bio-Techne to be a stronger scientific partner to help you attain your research goals. Our vast product range includes bioactive proteins, application-qualified antibodies, Quantikine ELISAs®, Luminex Assays®, and small molecule activators and inhibitors.



Researchers trust R&D Systems as the most referenced supplier of bioactive proteins and immunoassays in the industry. R&D Systems manufactures over 13,000 primary antibodies and produces many other products relevant for neuroscience research including Luminex assays, and reagents for culturing and investigating neural stem cells.



With a growing portfolio of over 155,000 antibodies, Novus Biologicals supplies the neuroscience research community with high-quality products that are applicable to all research trends and needs. Through established relationships with prominent neuroscience researchers, Novus Biologicals also offers niche antibodies that represent the most recent and up-to-date products on the market.



Tocris is the leading global supplier of biologically active small molecules and peptides for neuroscience research. The Tocris range of innovative, exceptional quality reagents consists of over 3,500 neurotransmitter receptor agonists and antagonists, ion channel modulators, enzyme inhibitors, caged compounds, fluorescent probes, and screening libraries.



ProteinSimple develops and commercializes proprietary systems and consumables for protein analysis that ultimately help reveal new insights into the true nature of proteins. For neuroscientists who regularly conduct multiple Western blot experiments, ProteinSimple products make protein analysis simpler, more quantitative, and affordable.

PROTEINS

R&D Systems recombinant and natural proteins are the industry's premiere bioactive proteins. Extensive quality control testing throughout development and manufacturing processes ensures consistent performance that cannot be matched.

Recombinant and Natural Proteins

Guaranteed Performance, Saving You Time and Money

- Every lot is tested before release and again after bottling to ensure high bioactivity and consistent performance.
- We back up our performance specifications with relevant bioassay data.

High Purity for Trusted Results

- Our proteins are highly pure and, at minimum, must meet the lowest endotoxin specification (<0.1 EU/ μ g) on the market.

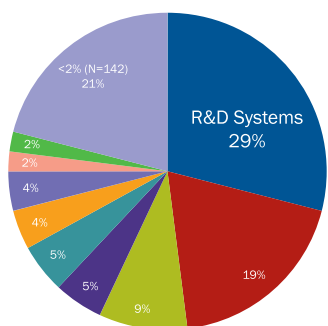
Largest Selection

- We offer over 4,800 recombinant and natural proteins from over 22 species.

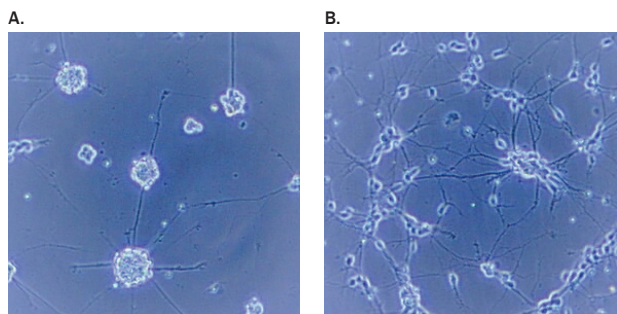
Manufactured by Scientists, for Scientists

- More than 95% of our proteins are manufactured in-house.
- N-terminal amino acid sequences are verified for guaranteed authenticity.

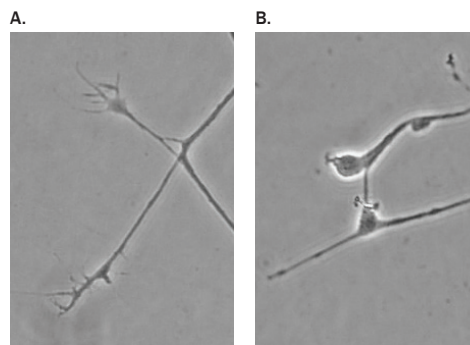
Most Referenced Protein Manufacturer



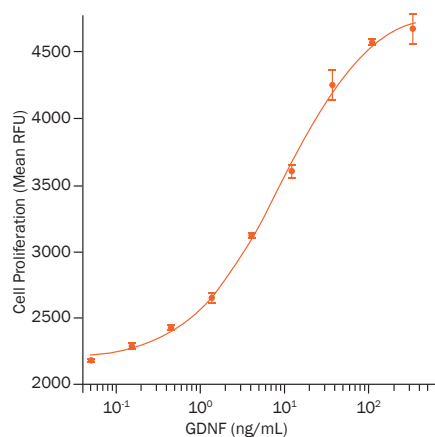
Protein Citations by Vendor. A literature survey of 1,125 manuscripts published in 2013, containing 15,180 product citations from 16 different journals related to cancer, immunology, neuroscience, and stem cells, was conducted to determine the number of citations referencing the use of R&D Systems proteins compared to the number referencing proteins manufactured by other companies. Of the 1,586 total protein citations identified in the survey, 29% cited the use of our proteins. The percentage of citations attributed to eight other major protein manufacturers is also shown (clockwise from R&D Systems, red-green sections). The final segment in the pie chart (21%, light purple section) includes 333 citations referencing products from 142 different companies. All companies listed under this category had less than 2% of the total number of citations.



Meteorin-like Stimulates Neurite Outgrowth. Embryonic rat cortical neurons (E18) were cultured for 3 days in the absence (A) or presence (B) of Recombinant Mouse Meteorin-like/METRNL (R&D Systems, Catalog # 6679-MN) immobilized on a nitrocellulose-coated microplate. The presence of the Meteorin-like protein significantly enhanced neurite outgrowth.



Semaphorin 3A-Induced Growth Cone Collapse. A fully extended chick dorsal root ganglion growth cone grown in the presence of Recombinant Human β -NGF (Catalog # 256-GF) was untreated (A) or treated (B) with Recombinant Human Semaphorin 3A (Catalog # 1250-S3). Treatment with Semaphorin 3A induced growth cone collapse. All cited reagents are from R&D Systems.



GDNF Induces Proliferation of Human Neuroblastoma Cells. The SH-SY5Y human neuroblastoma cell line was treated with increasing concentrations of Recombinant Human GDNF (Catalog # 212-GD). Cell proliferation was assessed using Resazurin (Catalog # AR002). All cited reagents are from R&D Systems.

Learn more | rndsystems.com/Proteins

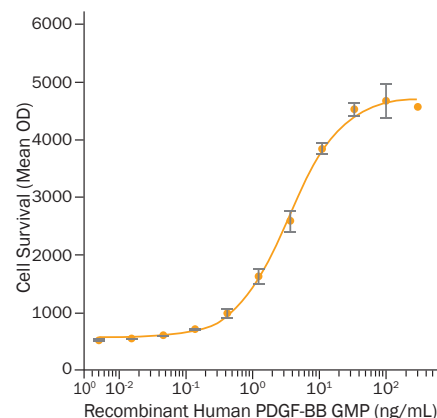
We have further developed our high-quality proteins to support developing research and bioproduction demands.

GMP-Grade Proteins

- Proteins are produced in a certified ISO 9001 facility in compliance with relevant guidelines.*
- They exhibit the same consistent performance that is expected from R&D Systems recombinant proteins.
- We offer the largest selection of GMP-Grade proteins, including many that are available exclusively from R&D Systems.

Learn more | rndsystems.com/GMP

*Manufactured in compliance of the applicable sections of World Health Organization TRS, No 822, 1992 Annex 1, Good Manufacturing Practices for biological products; USP Chapter 1043, Ancillary Materials for Cell, Gene, and Tissue-Engineered Products, and USP Chapter 92, Cytokines used in Cell Therapy Manufacturing.

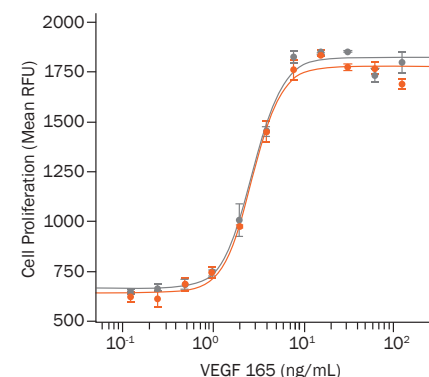


Bioactivity of GMP-Grade Recombinant Human PDGF-BB. GMP-Grade Recombinant Human PDGF-BB (Catalog # 220-GMP) enhances survival of rat embryonic (E16-E18) cortical neurons. Cell survival was assessed using Resazurin (Catalog # AR002). All cited reagents are from R&D Systems.

Animal-Free™ Recombinant Proteins

- Proteins are manufactured in a laboratory exclusively dedicated to the production and purification of recombinant proteins under animal-free conditions.
- Animal Component-Free Process (ACFP) recombinant proteins, which are expressed in an animal-free certified Sf 9 insect cell line using dedicated animal-free raw materials and labware, are also available.
- Animal-Free and ACFP recombinant proteins exhibit the same biological activities as our conventionally manufactured recombinant proteins.

Learn more | rndsystems.com/AnimalFree

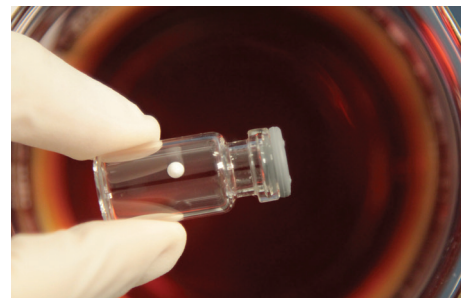


ACFP and Conventionally Manufactured Human VEGF 165 Exhibit the Same Bioactivity. Both ACFP Recombinant Human VEGF 165 (Catalog # ACFP293; gray) and conventionally manufactured Recombinant Human VEGF 165 (Catalog # 293-VE; orange) stimulate the concentration-dependent proliferation of human umbilical vein endothelial cells as measured using Resazurin (Catalog # AR002). All cited reagents are from R&D Systems.

ProDots™ Proteins

- Our industry-leading bioactive proteins are packaged into easy-to-use lyophilized balls that can be rolled directly into cell culture media.
- Save time and ensure maximum recovery of your purchased protein by simply dropping the protein ball directly into your cell culture medium.

Learn more | rndsystems.com/ProDots



SELECT PROTEINS

Molecule	Species	Catalog #	Source
ACE	Human	929-ZN	NS0
ACE	Mouse	1513-ZN	NS0
ACE-2	Human	933-ZN	NS0
ACE-2	Mouse	3437-ZN	CHO
Acetylcholinesterase	Human	7574-CE	CHO
Acetylcholinesterase	Mouse	5518-CE	NS0
Activin A	Human, Mouse, Rat	338-AC	CHO
ADAM8	Human	1031-AD	NS0
ADAM9	Human	939-AD	NS0
ADAM9	Mouse	949-AD	Sf 21
ADAM10	Human	936-AD	Sf 21
ADAM10	Mouse	946-AD	Sf 21
ADAM12	Human	4416-AD	CHO
ADAMTS1	Human	2197-AD	NS0
ADAMTS1	Mouse	5867-AD	CHO
Agrin	Rat	550-AG	Sf 21
Agrin	Human	6624-AG	CHO
AMIGO	Human	2565-AM	NS0
AMIGO2	Human	2080-AM	CHO
Apolipoprotein E Receptor 2	Human	3520-AR	CHO
Apolipoprotein E3	Human	4144-AE	<i>E. coli</i>
APP/Protease Nexin II	Human	3466-PI	NS0
Artemin	Human	2589-AR	<i>E. coli</i>
Artemin	Mouse	1085-AR	<i>E. coli</i>
BACE-1	Human	931-AS	NS0
BACE-1	Mouse	2976-AS	NS0
BACE-2	Human	4097-AS	NS0
BDNF	Human, Mouse, Rat	248-BD	Sf 21
BMP-1/PCP	Human	1927-ZN	NS0
BMP-2	Human	355-BM	CHO
BMP-2	Human	355-BEC	<i>E. coli</i>
BMP-2, GMP	Human	355-GMP	CHO
BMP-2/BMP-6 Heterodimer	Human	7145-BP	<i>E. coli</i>
BMP-2/BMP-7 Heterodimer	Human	3229-BM	<i>E. coli</i>
BMP-3	Human	113-BP	<i>E. coli</i>
BMP-3b/GDF-10	Human	1543-BP	<i>E. coli</i>
BMP-4	Mouse	5020-BP	CHO
BMP-4	Human	314-BP	NS0
BMP-4/BMP-7 Heterodimer	Human	3727-BP	<i>E. coli</i>
BMP-5	Human	615-BMC	CHO
BMP-5	Mouse	6176-BM	CHO
BMP-6	Mouse	6325-BM	CHO
BMP-6	Human	507-BP	NS0
BMP-7	Human	354-BP	CHO
BMP-7	Mouse	5666-BP	CHO
BMP-8a	Human	1073-BPC	CHO

Molecule	Species	Catalog #	Source
BMP-8a	Mouse	7540-BP	CHO
BMP-8a	Human	1073-BP	<i>E. coli</i>
BMP-9	Human	3209-BP	CHO
BMP-9	Mouse	5566-BP	CHO
BMP-10	Mouse	6038-BP	CHO
BMP-10	Human	2926-BP	CHO
BMP-10 Propeptide	Human	3956-BP	NS0
BMP-15	Human	5096-BM	CHO
Calsyntenin-2	Human	5480-CL	NS0
Caspase-3	Human	707-C3	<i>E. coli</i>
Caspase-7	Human	823-C7	<i>E. coli</i>
Caspase-8	Human	705-C8	<i>E. coli</i>
Cathepsin D	Human	1014-AS	NS0
Cathepsin D	Mouse	1029-AS	NS0
Cerebellin-1	Human	6934-CB	CHO
Cerebellin-2	Human	7044-CB	CHO
CNTF	Human	257-NT	<i>E. coli</i>
CNTF	Rat	557-NT	<i>E. coli</i>
CNTF R α	Human	303-CR	Sf 21
CNTF R α	Rat	558-CR	Sf 21
Contactin-1	Human	904-CN	Sf 21
Contactin-2	Human	1714-CN	NS0
Contactin-2	Mouse	4439-CN	NS0
Contactin-3	Human	5539-CN	NS0
Contactin-4	Human	2205-CN	NS0
Contactin-6	Mouse	5890-CN	CHO
Desert Hedgehog (C23II) N-Terminus	Human	4777-DH	<i>E. coli</i>
Desert Hedgehog (C23II) N-Terminus	Mouse	733-DH	<i>E. coli</i>
Draxin	Mouse	6149-DR	NS0
DSCAM	Human	3666-DS	NS0
ECE-1	Human	1784-ZN	NS0
ECE-1	Mouse	5796-ZN	CHO
ECE-2	Human	1645-ZN	NS0
EGF	Human	236-EG	<i>E. coli</i>
EGF	Mouse	2028-EG	<i>E. coli</i>
EGF, Animal-Free	Human	AFL236	<i>E. coli</i>
EGF, GMP	Human	236-GMP	<i>E. coli</i>
EGF R/ErbB1	Human	1095-ER	NS0
EGF R/ErbB1	Human	344-ER	NS0
EGF R/ErbB1	Mouse	1280-ER	NS0
EphA1	Human	7146-A1	HEK293
EphA1	Human	638-A1	HEK293
EphA1	Mouse	3034-A1	NS0
EphA2	Mouse	639-A2	NS0
EphA2	Human	3035-A2	NS0
EphA3	Human	6444-A3	NS0
EphA3	Mouse	640-A3	NS0

Source Key: CHO (Chinese hamster ovary cell line), HEK293 (Human embryonic kidney cell line), NS0 (Mouse myeloma cell line), Sf (*Spodoptera frugiperda*)

SELECT PROTEINS

Molecule	Species	Catalog #	Source
EphA4	Human	6827-A4	NS0
EphA4	Mouse	641-A4	NS0
EphA5	Human	3036-A5	NS0
EphA5	Mouse	3037-A5	NS0
EphA6	Human	5606-A6	CHO
EphA6	Mouse	607-A6	NS0
EphA7	Human	6756-A7	NS0
EphA7	Mouse	608-A7	NS0
EphA8	Human	6828-A8	NS0
EphA8	Mouse	454-A8	NS0
EphA10	Human	5188-EA	NS0
EphB2	Human	5189-B2	NS0
EphB2	Mouse	467-B2	NS0
EphB3	Human	5667-B3	NS0
EphB3	Mouse	432-B3	NS0
EphB4	Mouse	446-B4	NS0
EphB4	Human	3038-B4	NS0
EphB6	Human	3384-B6	NS0
Ephrin-A1	Human	6417-A1	NS0
Ephrin-A1	Mouse	602-A1	NS0
Ephrin-A2	Human	7856-A2	NS0
Ephrin-A2	Mouse	603-A2	NS0
Ephrin-A3	Human	359-EA	NS0
Ephrin-A3	Mouse	7395-EA	NS0
Ephrin-A4	Human	369-EA	NS0
Ephrin-A4	Mouse	569-A4	NS0
Ephrin-A5	Human	374-EA	NS0
Ephrin-A5	Mouse	7396-EA	NS0
Ephrin-B1	Human	7654-EB	NS0
Ephrin-B1	Mouse	473-EB	NS0
Ephrin-B2	Human	7397-EB	NS0
Ephrin-B2	Mouse	496-EB	NS0
Ephrin-B3	Human	7924-EB	NS0
Ephrin-B3	Mouse	7655-EB	NS0
Ephrin-B3	Human	395-EB	NS0
Epimorphin/Syntaxin 2	Human	2936-EP	<i>E. coli</i>
Epimorphin/Syntaxin 2	Mouse	2568-EP	<i>E. coli</i>
ErbB2/Her2	Human	1129-ER	NS0
ErbB3/Her3	Human	348-RB	NS0
ErbB3/Her3	Mouse	4518-RB	NS0
ErbB4/Her4	Human	1131-ER	NS0
ErbB4/Her4	Mouse	4387-ER	NS0
FGF acidic	Bovine	132-FA	Bovine Brain
FGF acidic (aa 16-155)	Human	232-FA	<i>E. coli</i>
FGF acidic (aa 2-155)	Human	231-BC	<i>E. coli</i>
FGF basic	Bovine	133-FB	Bovine Brain
FGF basic	Rat	3339-FB	<i>E. coli</i>

Molecule	Species	Catalog #	Source
FGF basic	Bovine	2099-FB	<i>E. coli</i>
FGF basic	Mouse	3139-FB	<i>E. coli</i>
FGF basic, Animal-Free	Bovine	AFL2099	<i>E. coli</i>
FGF basic (145 aa)	Human	3718-FB	<i>E. coli</i>
FGF basic (146 aa)	Human	233-FB	<i>E. coli</i>
FGF basic (146 aa) Animal-Free	Human	AFL233	<i>E. coli</i>
FGF basic, 145 aa (TC Grade)	Human	4114-TC	<i>E. coli</i>
FGF basic (146 aa), GMP	Human	233-GMP	<i>E. coli</i>
FGF basic (157 aa)	Human	234-FSE	<i>E. coli</i>
FGF R1 α (IIIb)	Human	655-FR	NS0
FGF R1 α (IIIc)	Human	658-FR	NS0
FGF R1 β (IIIb)	Human	765-FR	NS0
FGF R1 β (IIIc)	Human	661-FR	NS0
FGF R2 α (IIIb)	Mouse	5496-MF	NS0
FGF R2 α (IIIb)	Human	663-FR	<i>Sf</i> 21
FGF R2 α (IIIc)	Human	712-FR	NS0
FGF R2 β (IIIb)	Human	665-FR	<i>Sf</i> 21
FGF R2 β (IIIb)	Mouse	708-MF	<i>Sf</i> 21
FGF R2 β (IIIc)	Human	684-FR	NS0
FGF R2 β (IIIc)	Mouse	716-MF	NS0
FGF R3 (IIIb)	Human	1264-FR	NS0
FGF R3 (IIIc)	Human	766-FR	NS0
FGF R3 (IIIc)	Mouse	710-MF	NS0
FGF R4	Human	685-FR	NS0
FGF R4	Mouse	2265-FR	NS0
FGF R5	Mouse	1899-FR	NS0
FGF-3	Human	1206-F3	<i>E. coli</i>
FGF-4	Human	235-F4	<i>E. coli</i>
FGF-4	Mouse	5846-F4	<i>E. coli</i>
FGF-4 (aa 67-202)	Mouse	7486-F4	<i>E. coli</i>
FGF-4 (aa 71-206)	Human	7460-F4	<i>E. coli</i>
FGF-5	Human	237-F5	<i>E. coli</i>
FGF-6	Mouse	5750-F6	<i>E. coli</i>
FGF-6	Human	238-F6	<i>E. coli</i>
FGF-8a	Human	4745-F8	<i>E. coli</i>
FGF-8c	Mouse	424-FC	<i>E. coli</i>
FGF-8f	Human	5027-FF	<i>E. coli</i>
FGF-9	Mouse	7399-F9	<i>E. coli</i>
FGF-9	Human	273-F9	<i>Sf</i> 21
FGF-10	Human	345-FG	<i>E. coli</i>
FGF-10	Mouse	6224-FG	<i>E. coli</i>
FGF-12	Human	2246-FG	<i>E. coli</i>
FGF-16	Human	1212-FG	<i>E. coli</i>
FGF-17	Human	319-FG	<i>E. coli</i>
FGF-17	Mouse	7400-FG	<i>E. coli</i>
FGF-19	Human	969-FG	<i>E. coli</i>
FGF-20	Human	2547-FG	<i>E. coli</i>

Source Key: CHO (Chinese hamster ovary cell line), HEK293 (Human embryonic kidney cell line), NS0 (Mouse myeloma cell line), *Sf* (*Spodoptera frugiperda*)

SELECT PROTEINS

Molecule	Species	Catalog #	Source
FGF-21	Human	2539-FG	<i>E. coli</i>
FGF-22	Human	3867-FG	<i>E. coli</i>
FGF-23	Human	2604-FG	NSO
FGF-23	Mouse	2629-FG	NSO
FGF-BP	Human	1593-FB	NSO
FGL2	Mouse	5257-FL	CHO
Fibronectin	Bovine	1030-FN	Bovine Plasma
Fibronectin	Human	4305-FN	NSO
Fibronectin, ACFP	Human	ACFP4305	<i>Sf</i> 9
Fibronectin	Human	8258-FN	<i>E. coli</i>
Fibronectin Fragment 3	Human	3938-FN	NSO
Fibronectin Fragment 4	Human	3624-FN	NSO
Frizzled-1	Human	5988-FZ	NSO
Frizzled-1	Mouse	1120-FZ	NSO
Frizzled-2	Mouse	1307-FZ	NSO
Frizzled-4	Mouse	194-FZ	NSO
Frizzled-4	Human	5847-FZ	NSO
Frizzled-5	Human	1617-FZC	CHO
Frizzled-5	Human	1617-FZ	NSO
Frizzled-7	Human	6178-FZ	CHO
Frizzled-7	Mouse	198-FZ	NSO
Frizzled-8	Human	6129-FZ	CHO
Frizzled-8	Mouse	112-FZ	NSO
Frizzled-9	Mouse	2440-FZ	CHO
Frizzled-10	Human	3459-FZ	NSO
F-Spondin/SPON1	Human	3135-SP	NSO
F-Spondin/SPON1	Mouse	7950-SP	NSO
GDF-1	Human	6937-GD	CHO
GDF-3	Human	5754-G3	CHO
GDF-3	Mouse	958-G3	<i>E. coli</i>
GDF-5	Mouse	853-G5	<i>E. coli</i>
GDF-6/BMP-13	Mouse	855-G6	<i>E. coli</i>
GDF-7	Mouse	779-G7	<i>E. coli</i>
GDF-8 Propeptide	Mouse	6986-PG	NSO
GDF-8 Propeptide	Mouse	1539-PG	NSO
GDF-8/Myostatin	Human, Mouse, Rat	788-G8	NSO
GDF-9	Mouse	739-G9	CHO
GDF-11/BMP-11	Human, Mouse, Rat	1958-GD	<i>E. coli</i>
GDF-15	Human	957-GD	CHO
GDF-15	Human	8146-GD	HEK293
GDNF	Human	212-GD	NSO
GFR α -1	Human	714-GR	NSO
GFR α -2	Human	613-FR	NSO
GFR α -2	Mouse	429-FR	NSO
GFR α -3	Human	7269-FR	CHO
GFR α -3	Human	670-FR	<i>Sf</i> 21
GFR α -3	Mouse	2645-FR	<i>Sf</i> 21
Glypican 1	Human	4519-GP	NSO

Molecule	Species	Catalog #	Source
Glypican 1	Mouse	4520-GP	NSO
Glypican 2	Human	2304-GP	NSO
Glypican 2	Mouse	2355-GP	NSO
Glypican 3	Human	2119-GP	NSO
Glypican 3	Mouse	6938-GP	NSO
Glypican 5	Human	2607-G5	NSO
Glypican 5	Mouse	2689-G5	NSO
Glypican 6	Human	2845-GP	NSO
gp130	Human	671-GP	NSO
gp130	Mouse	468-MG	NSO
gp130	Rat	5029-RG	NSO
IFN- β	Mouse	8234-MB	HEK293
IFN- γ	Mouse	485-MI	<i>E. coli</i>
IGSF4A/SynCAM1	Human	3519-S4	NSO
IGSF4A/SynCAM1	Mouse	1459-S4	NSO
IGSF4B/SynCAM3	Human	3678-S4	NSO
IGSF4C/SynCAM4	Human	4164-S4	NSO
IGSF4D/SynCAM2	Human	4290-S4	NSO
IL-1 α	Human	200-LA	<i>E. coli</i>
IL-1 α	Mouse	400-ML	<i>E. coli</i>
IL-1 β	Human	201-LB	<i>E. coli</i>
IL-1 β	Mouse	401-ML	<i>E. coli</i>
IL-1 β , GMP	Human	201-GMP	<i>E. coli</i>
IL-1 RAcP/IL-1 R3	Human	676-CP	<i>Sf</i> 21
IL-1 RAPL2/IL-1 R9	Human	1007-MR	NSO
IL-1 RI	Mouse	771-MR	NSO
IL-1 RI	Human	269-1R	NSO
IL-1 RII	Human	663-2R	CHO
IL-1 RII	Mouse	563-MR	<i>Sf</i> 21
IL-1 RII	Human	263-2R	<i>Sf</i> 21
IL-1 Rrp2/IL-1 R6	Mouse	2354-RP	NSO
IL-1 Rrp2/IL-1 R6	Human	872-RP	<i>Sf</i> 21
IL-2	Mouse	402-ML	<i>E. coli</i>
IL-2, Animal-Free	Human	AFL202	<i>E. coli</i>
IL-4	Human	204-IL	<i>E. coli</i>
IL-4	Mouse	404-ML	<i>E. coli</i>
IL-4	Rat	504-RL	<i>E. coli</i>
IL-4, Animal-Free	Human	AFL204	<i>E. coli</i>
IL-6	Human	206-IL	<i>E. coli</i>
IL-6	Mouse	406-ML	<i>E. coli</i>
IL-6	Human	7270-IL	HEK293
IL-6 R α	Human	227-SR	<i>Sf</i> 21
IL-6 R α (aa 20-357)	Mouse	1830-SR	NSO
IL-6, Animal-Free	Human	AFL206	<i>E. coli</i>
IL-6, GMP	Human	206-GMP	<i>E. coli</i>
IL-10	Mouse	417-ML	<i>E. coli</i>
IL-10	Rat	522-RL	<i>E. coli</i>
IL-10	Human	217-IL	<i>Sf</i> 21
IL-10 (aa 19-178)	Human	1064-IL	<i>E. coli</i>

Source Key: CHO (Chinese hamster ovary cell line), HEK293 (Human embryonic kidney cell line), NSO (Mouse myeloma cell line), *Sf* (*Spodoptera frugiperda*)

SELECT PROTEINS

Molecule	Species	Catalog #	Source
IL-10 R α	Mouse	474-MR	<i>Sf</i> 21
IL-10 R α	Mouse	7704-MR	<i>Sf</i> 21
IL-10 R α	Human	274-R1B	<i>Sf</i> 21
IL-10 R α	Human	274-R1	<i>Sf</i> 21
IL-10 R β	Human	874-RB	NS0
IL-10 R β	Mouse	5368-RB	NS0
IL-12	Human	219-IL	<i>Sf</i> 21
IL-12	Mouse	419-ML	<i>Sf</i> 21
IL-12	Rat	1760-RL	<i>Sf</i> 21
IL-12, GMP	Human	219-GMP	<i>Sf</i> 21
IL-17A	Mouse	7956-ML	CHO
IL-17A	Mouse	421-ML	<i>E. coli</i>
IL-17A	Human	317-IL	<i>E. coli</i>
IL-17A	Human	7955-IL	HEK293
IL-17A/F Heterodimer	Human	5837-IL	CHO
IL-17A/F Heterodimer	Human	5194-IL	<i>E. coli</i>
IL-17A/F Heterodimer	Mouse	5390-IL	<i>E. coli</i>
IL-17B	Human	8129-IL	CHO
IL-17B	Human	1248-IB	<i>E. coli</i>
IL-17B	Mouse	1709-ML	<i>E. coli</i>
IL-17C	Human	1234-IL	<i>E. coli</i>
IL-17C	Mouse	2306-ML	<i>E. coli</i>
IL-17D	Mouse	2274-ML	<i>E. coli</i>
IL-17D	Human	1504-IL	<i>E. coli</i>
IL-17E	Human	1258-IL	<i>E. coli</i>
IL-17E	Mouse	1399-IL	<i>E. coli</i>
IL-17E	Human	8134-IL	HEK293
IL-17E	Mouse	7909-IL	NS0
IL-17F	Human	1335-IL	<i>E. coli</i>
IL-17F	Mouse	2057-IL	<i>E. coli</i>
IL-17F	Human	1335-INS	NS0
IL-17 RA/IL-17 R	Human	177-IR	NS0
IL-17 RA/IL-17 R	Mouse	4481-MR	NS0
IL-17 RB	Human	1207-BR	NS0
IL-17 RB	Mouse	1040-BR	NS0
IL-17 RC	Human	2269-IL	NS0
IL-17 RC	Mouse	2270-ML	NS0
IL-17 RD/SEF	Human	2275-IL	NS0
IL-17 RE	Mouse	7997-MR	NS0
IL-18/IL-1F4	Rat	521-RL	<i>E. coli</i>
IL-20	Human	1102-IL	<i>E. coli</i>
IL-20	Mouse	1204-ML	<i>E. coli</i>
IL-20 R α	Human	1176-IR	NS0
IL-20 R β	Human	1788-IR	NS0
IL-20 R β	Mouse	4388-MR	NS0
IL-21	Mouse	594-ML	<i>E. coli</i>
IL-22	Human	782-IL	<i>E. coli</i>
IL-22	Mouse	582-ML	<i>E. coli</i>
IL-22	Rat	1316-RL	<i>E. coli</i>

Molecule	Species	Catalog #	Source
IL-23	Human	1290-IL	<i>Sf</i> 21
IL-23	Rat	3136-RL	<i>Sf</i> 21
IL-23	Mouse	1887-ML	<i>Sf</i> 21
IL-27	Human	2526-IL	NS0
IL-27	Mouse	2799-ML	NS0
IL-27 p28/IL-30	Mouse	7430-ML	NS0
IL-33	Human	3625-IL	<i>E. coli</i>
IL-33	Mouse	3626-ML	<i>E. coli</i>
Insulysin	Human	2496-ZN	<i>Sf</i> 21
Insulysin	Rat	6958-ZN	<i>Sf</i> 21
Meteorin	Mouse	3475-MN	NS0
Meteorin-like	Mouse	6679-MN	CHO
MMP-2	Human	902-MP	CHO
MMP-9	Human	911-MP	CHO
MMP-9	Mouse	909-MM	NS0
MMP-9	Rat	5427-MM	NS0
N-Cadherin	Human	1388-NC	NS0
N-Cadherin	Mouse	6626-NC	NS0
NCAM-1/CD56	Human	2408-NC	NS0
NCAM-1/CD56	Mouse	6070-NC	NS0
Nectin-1	Human	2880-N1	NS0
Nectin-2/CD112	Human	2229-N2	NS0
Nectin-2/CD112	Mouse	3869-N2	NS0
Nectin-3	Human	3064-N3	NS0
Nectin-4	Human	2659-N4	NS0
Nectin-4	Mouse	3116-N4	NS0
Nepriylsin	Human	1182-ZNC	CHO
Nepriylsin	Mouse	1126-ZNC	CHO
Netrin-1	Human	6419-N1	NS0
Netrin-1	Mouse	1109-N1	NS0
Netrin-4	Human	1254-N4	NS0
Netrin-4	Mouse	1132-N4	NS0
Netrin-G1a	Mouse	1166-NG	<i>Sf</i> 21
Netrin-G2a	Mouse	2744-NG	NS0
Neurexin 1 β	Human	5268-NX	NS0
Neurexin 3 β	Human	5269-NX	NS0
Neurexophilin-1	Human	4957-NX	NS0
Neurocan	Human	6508-NC	CHO
Neurocan	Mouse	5800-NC	CHO
Neurofascin	Rat	3235-NF	NS0
Neuroglycan C	Human	5685-NG	CHO
Neuroglycan C	Mouse	5665-NG	CHO
Neurologin 1 Variant 2	Human	7066-NL	NS0
Neurologin 1 Variant 2 (-ssB)	Human	6446-NL	NS0
Neurologin 2	Human	5645-NL	NS0
Neurologin 4	Human	5158-NL	NS0
Neuronal Pentraxin 1	Human	7707-NP	NS0
Neuronal Pentraxin 2	Human	7816-NP	NS0

Source Key: CHO (Chinese hamster ovary cell line), HEK293 (Human embryonic kidney cell line), NS0 (Mouse myeloma cell line), *Sf* (*Spodoptera frugiperda*)

SELECT PROTEINS

Molecule	Species	Catalog #	Source
Neuronal Pentraxin R	Human	4414-NP	NS0
Neuropilin-1	Rat	566-NNS	NS0
Neuropilin-1	Human	3870-N1	NS0
Neuropilin-1	Mouse	5994-N1	NS0
Neuropilin-1	Rat	566-N1	Sf 21
Neuropilin-2	Human	2215-N2	NS0
Neuropilin-2	Mouse	7988-N2	NS0
Neuropilin-2	Rat	567-N2	NS0
Neuroplastin 65	Human	5360-NP	NS0
Neuropoietin	Mouse	2709-NP	<i>E. coli</i>
Neurturin	Human	1297-NE	<i>E. coli</i>
Neurturin	Mouse	477-MN	<i>E. coli</i>
Neurturin (Histidine-tagged)	Human	387-NE	<i>E. coli</i>
β-NGF	Human	256-GF	NS0
β-NGF	Mouse	1156-NG	NS0
β-NGF	Rat	556-NG	Sf 21
β-NGF	Rat	7815-NG	CHO
NGF R/TNFRSF16	Mouse	1157-NR	NS0
NGF R/TNFRSF16	Human	367-NR	Sf 21
Nogo Receptor	Human	1208-NG	NS0
Nogo-A	Rat	2445-NG	NS0
Nogo-A (aa 1-172)	Rat	3098-NG	NS0
Nogo-A (aa 566-748)	Human	3515-NG	CHO
Nogo-A (aa 1026-1090)	Rat	3728-NG	Sf 21
NrCAM	Human	2034-NR	NS0
NRG1 (Isoform SMDF)	Human	378-SM	Sf 21
NRG1/HRG1	Human	5898-NR	NS0
NRG1-α/HRG1-α (EGF Domain)	Human	296-HR	<i>E. coli</i>
NRG1-β1/HRG1-β1 (ECD)	Human	377-HB	<i>E. coli</i>
NRG1-β1/HRG1-β1 (EGF Domain)	Human	396-HB	<i>E. coli</i>
NRG1-β1/HRG1-β1 EGF Domain, GMP	Human	396-GMP	<i>E. coli</i>
NT-3	Human	267-N3	Sf 21
NT-4	Mouse	3236-N4	NS0
NT-4	Human	268-N4	Sf 21
PDGF Rα	Human	6765-PR	NS0
PDGF Rα	Mouse	1062-PR	NS0
PDGF Rα	Human	322-PR	NS0
PDGF Rβ	Human	385-PR	NS0
PDGF Rβ	Mouse	1042-PR	NS0
PDGF-AA	Human	221-AA	<i>E. coli</i>
PDGF-AB	Human	222-AB	<i>E. coli</i>
PDGF-BB	Human	220-BB	<i>E. coli</i>
PDGF-BB, GMP	Human	220-GMP	<i>E. coli</i>
PDGF-CC	Mouse	1447-PC	<i>E. coli</i>
PDGF-CC	Human	1687-CC	<i>E. coli</i>

Molecule	Species	Catalog #	Source
PDGF-DD	Human	1159-SB	NS0
Pentraxin 2	Human	1948-SA	NS0
Pentraxin 2	Mouse	2558-SA	NS0
Pentraxin 3	Human	1826-TS	NS0
Pentraxin 3	Mouse	2166-TS	NS0
Persephin	Mouse	2479-PS	<i>E. coli</i>
Persephin	Human	2388-PS	<i>E. coli</i>
Plexin A1	Mouse	4309-PA	NS0
Plexin A4	Human	5856-PA	CHO
Plexin B2	Human	5329-PB	CHO
Plexin B2	Mouse	6836-PB	CHO
Plexin D1	Human	4160-PD	NS0
Reelin	Mouse	3820-MR	NS0
Reg2	Mouse	2098-RG	CHO
Reg3A	Mouse	7539-RG	CHO
Reg3A	Human	5940-RG	<i>E. coli</i>
Reg3A	Mouse	3907-RG	<i>E. coli</i>
Reg3B	Mouse	5110-RG	<i>E. coli</i>
Reg3G	Mouse	8189-RG	<i>E. coli</i>
Reg4	Human	1379-RG	<i>E. coli</i>
Reg4	Mouse	4780-RG	<i>E. coli</i>
RGM-A	Human	2459-RM	NS0
RGM-A	Mouse	2458-RG	NS0
RGM-B	Human	3630-RG	NS0
RGM-B	Mouse	3597-RG	NS0
RGM-C	Human	3720-RG	NS0
RGM-C	Mouse	3634-RG	NS0
ROBO1	Rat	1749-RB	NS0
ROBO2	Human	3147-RB	NS0
ROBO3	Human	3076-RB	NS0
ROBO3	Mouse	3155-RB	NS0
ROBO4	Human	2366-RB	NS0
R-Spondin 1	Human	4645-RS	CHO
R-Spondin 1	Mouse	7150-RS	CHO
R-Spondin 1	Mouse	3474-RS	<i>E. coli</i>
R-Spondin 2	Mouse	6946-RS	CHO
R-Spondin 2	Human	3266-RS	NS0
R-Spondin 3	Human	3500-RS	CHO
R-Spondin 3	Mouse	4120-RS	CHO
R-Spondin 4	Human	4575-RS	CHO
R-Spondin 4	Mouse	4106-RS	CHO
SCF	Human	255-SC	<i>E. coli</i>
SCF	Mouse	455-MC	<i>E. coli</i>
SCF	Human	7466-SC	HEK293
SCF, Animal-Free	Human	AFL255	<i>E. coli</i>
Semaphorin 3A	Mouse	5926-S3	CHO
Semaphorin 3A	Human	1250-S3	NS0
Semaphorin 3B	Mouse	5440-S3	NS0

Source Key: **CHO** (Chinese hamster ovary cell line), **HEK293** (Human embryonic kidney cell line), **NS0** (Mouse myeloma cell line), **Sf** (*Spodoptera frugiperda*)

SELECT PROTEINS

Molecule	Species	Catalog #	Source
Semaphorin 3C	Human	5570-S3	NS0
Semaphorin 3C (Truncated)	Mouse	1728-S3	Sf 21
Semaphorin 3E	Human	3239-S3	NS0
Semaphorin 3E	Mouse	3238-S3	Sf 21
Semaphorin 3F (Truncated)	Mouse	3237-S3	NS0
Semaphorin 4A	Human	4694-S4	NS0
Semaphorin 4D	Human	7470-S4	CHO
Semaphorin 4D	Mouse	5235-S4	NS0
Semaphorin 4F	Mouse	7200-S4	NS0
Semaphorin 4G	Human	5840-S4	NS0
Semaphorin 5A	Mouse	6584-S5	CHO
Semaphorin 5A	Human	5896-S5	NS0
Semaphorin 5B	Mouse	6766-S5	CHO
Semaphorin 6A	Human	1146-S6	NS0
Semaphorin 6B	Human	2094-S6	NS0
Semaphorin 6C	Human	2219-S6	NS0
Semaphorin 6C	Mouse	2108-S6	NS0
Semaphorin 6D	Human	2095-S6	NS0
Semaphorin 6D	Mouse	7067-S6	NS0
Semaphorin 7A	Human	2068-S7	NS0
Semaphorin 7A	Mouse	1835-S3	NS0
Slit1	Human	6514-SL	CHO
Slit1	Mouse	5199-SL	CHO
Slit2	Mouse	5444-SL	CHO
Slit3	Mouse	3629-SL	NS0
SLITRK1	Human	3009-SK	NS0
Soggy-1/DkkL1	Human	1549-S1	NS0
Sonic Hedgehog (C24II) N-Terminus	Human	1845-SH	<i>E. coli</i>
Sonic Hedgehog (C25II) N-Terminus	Mouse	464-SH	<i>E. coli</i>
Sonic Hedgehog N-Terminus	Human	1314-SH	<i>E. coli</i>
Sonic Hedgehog N-Terminus	Mouse	461-SH	<i>E. coli</i>
Sonic Hedgehog N-Terminus, GMP	Human	1314-GMP	<i>E. coli</i>
Sortilin	Human	3154-ST	NS0
Sortilin	Mouse	2934-ST	NS0
SOST/Sclerostin	Mouse	1589-ST	NS0
SOST/Sclerostin	Human	1406-ST	NS0
Syndecan-1	Human	2780-SD	NS0
Syndecan-1	Mouse	3190-SD	NS0
Syndecan-2	Human	2965-SD	NS0
Syndecan-2	Mouse	6585-SD	NS0
Syndecan-3	Human	3539-SD	NS0
Syndecan-3	Mouse	2734-SD	NS0
Syndecan-4	Human	2918-SD	NS0
Syndecan-4	Mouse	6267-SD	NS0

Molecule	Species	Catalog #	Source
Syntaxin 4	Human	7894-ST	<i>E. coli</i>
TGF- α	Human	239-A	<i>E. coli</i>
TGF- β 1	Mouse	7666-MB	CHO
TGF- β 1	Human	240-B	CHO
TGF- β 1	Human	7754-BH	HEK293
TGF- β 1, ACPF	Human	ACFP240	Sf 9
TGF- β 1, GMP	Human	240-GMP	CHO
TGF- β 1.2	Human	304-B3	Sf 21
TGF- β 2	Mouse	7346-B2	CHO
TGF- β 2	Human	302-B2	NS0
TGF- β 3	Human	243-B3	Sf 21
TGF- β RI/ALK-5	Human	3025-BR	NS0
TGF- β RI/ALK-5	Mouse	587-RI	Sf 21
TGF- β RII	Human	341-BR	NS0
TGF- β RII	Human	241-R2	NS0
TGF- β RII	Mouse	532-R2	NS0
TGF- β RII	Mouse	1600-R2	NS0
TGF- β RII Isoform 2	Human	1003-RT	NS0
TGF- β RIII	Human	242-R3	NS0
TGF- β RIII	Mouse	5034-R3	NS0
TNF- α	Human	210-TA	<i>E. coli</i>
TNF- α	Rat	510-RT	<i>E. coli</i>
TNF- α (aa 80-235)	Mouse	410-MT	<i>E. coli</i>
TNF- α (aa 84-235)	Mouse	410-TRNC	<i>E. coli</i>
TNF- α , Animal-Free	Human	AFL210	<i>E. coli</i>
TNF- α , GMP	Human	210-GMP	<i>E. coli</i>
TNF- β	Human	211-TB	<i>E. coli</i>
TrkA	Human	175-TK	NS0
TrkB	Mouse	1494-TB	NS0
TrkB	Human	688-TK	NS0
TrkC	Mouse	1404-TC	NS0
TrkC	Human	373-TC	NS0
Wnt-3a	Human	5036-WN	CHO
Wnt-3a	Mouse	1324-WN	CHO
Wnt-3a (High Purity)	Mouse	1324-WNP	CHO
Wnt-3a (High Purity)	Human	5036-WNP	CHO
Wnt-3a, GMP	Human	5036-GMP	CHO
Wnt-4	Human	6076-WN	CHO
Wnt-4	Mouse	475-WN	CHO
Wnt-5b	Human	7347-WN	CHO
Wnt-5b	Mouse	3006-WN	CHO
Wnt-7a	Human	3008-WN	CHO
Wnt-9a	Mouse	8148-WN	CHO
Wnt-9b	Mouse	3669-WN	CHO
Wnt-10b	Human	7196-WN	CHO
Wnt-10b	Mouse	2110-WN	CHO
Wnt-11	Human	6179-WN	CHO
Wnt-16b	Human	7790-WN	CHO

Source Key: CHO (Chinese hamster ovary cell line), HEK293 (Human embryonic kidney cell line), NS0 (Mouse myeloma cell line), Sf (*Spodoptera frugiperda*)

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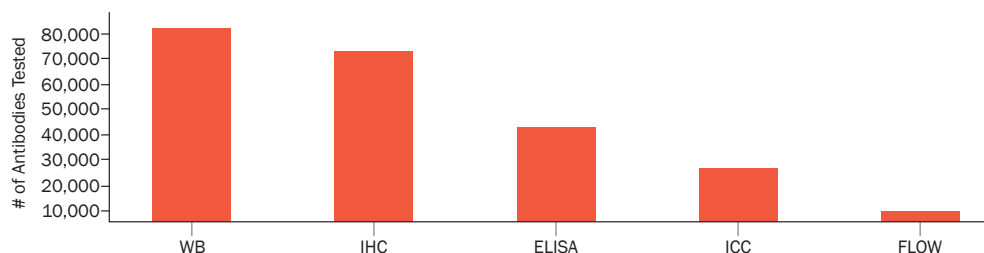
Defining Features of Bio-Techne Neuroscience Antibodies

Diverse and Extensive Analyte Selection

- Bio-Techne now offers over 168,000 antibodies between Novus Biologicals and R&D Systems portfolios (with 3,700 molecules available for conjugation). These antibodies cover key research areas in Neuroscience including:
 - Neurodegeneration
 - Developmental Biology
 - Neural Stem Cells
 - Neuroendocrinology
 - Sensory Systems
 - Cognition and Behavior
 - Synaptic Transmission
 - Signal Transduction
 - Neurotrophic Receptors

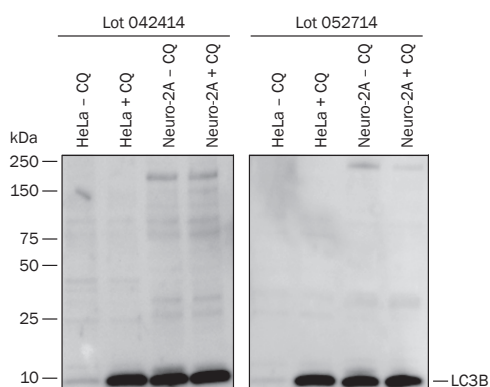
Tested in Multiple Applications

- Our antibodies are validated for multiple applications including: Western blot (WB), Immunocytochemistry (ICC), Immunohistochemistry (IHC), Flow Cytometry (FLOW), Enzyme-Linked Immunosorbent Assay (ELISA), Immunoprecipitation (IP), Chromatin Immunoprecipitation (ChIP), and Blocking/Neutralization (B/N).

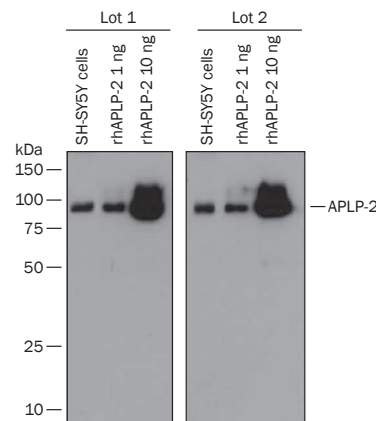


Thorough Manufacturing and Validation Processes

- Our rigorous purification and quality control processes ensure lot-to-lot specificity.



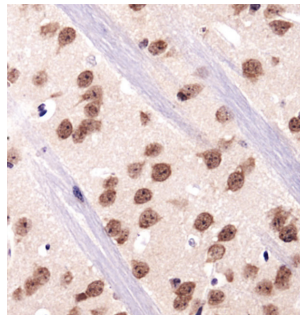
Lot-to-Lot Consistency of LC3B Detection by Western Blot. Specific detection of Human LC3B in lysates from the HeLa human cervical epithelial carcinoma and Neuro-2A mouse neuroblastoma cell lines that were either untreated (-CQ) for treated (+CQ) with Chloroquine was confirmed using two separate lots of a Rabbit-Anti Human/Mouse/Rat LC3B Polyclonal Antibody (Novus Biologicals, Catalog # NB600-1384).



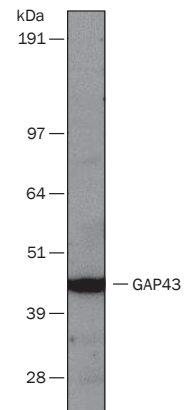
Lot-to-Lot Consistency of APLP-2 Detection by Western Blot. Specific detection of Human APLP-2 in lysates from the SH-SY5Y human neuroblastoma cell line was confirmed with increasing concentrations of recombinant human APLP-2 using two separate lots of a Mouse-Anti Human APLP-2 Monoclonal Antibody (R&D Systems, Catalog # MAB49451).

Application Data in a Wide Variety of Neuronal Substrates

NeuN in Mouse Brain. NeuN was detected in immersion-fixed paraffin-embedded sections of mouse brain (cerebellum) using a Rabbit Anti-Human/Mouse/Rat RBFOX3/NeuN Antigen Affinity-Purified Polyclonal Antibody (Novus Biologicals, Catalog # NBP1-77686). The cerebellar tissue was stained using HRP and DAB (brown), and counterstained with hematoxylin (blue).

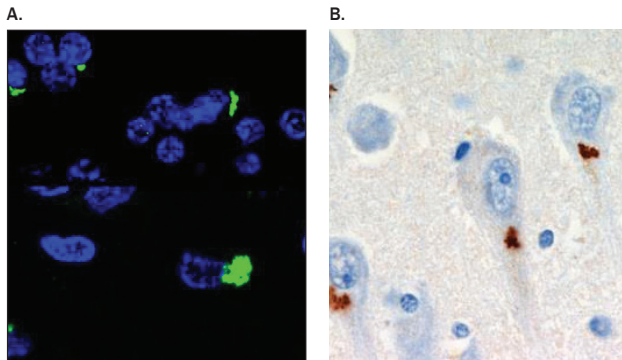


Detection of Human GAP43 by Western Blot. Western blot shows lysates of normal Human Brain Whole Tissue Lysate (Catalog # NB820-59177). The nitrocellulose membrane was probed with a Sheep Anti-Human/Mouse/Rat/Canine/Feline/Hamster/Primate GAP43 Polyclonal Antibody (Catalog # NBP1-41123) followed by a HRP-Conjugated Donkey Anti-Sheep IgG Secondary Antibody (Catalog # NB740-H). A specific band was detected for GAP43 at approximately 45 kDa (as indicated). All cited reagents are from Novus Biologicals.

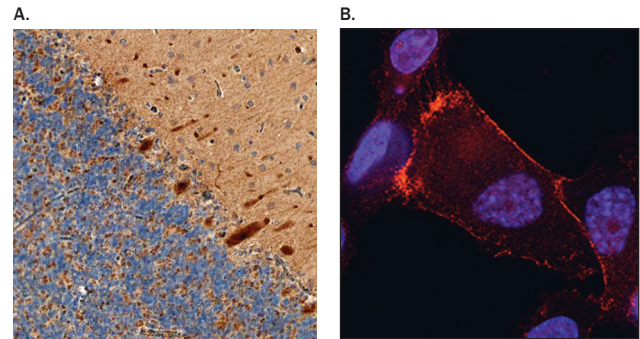


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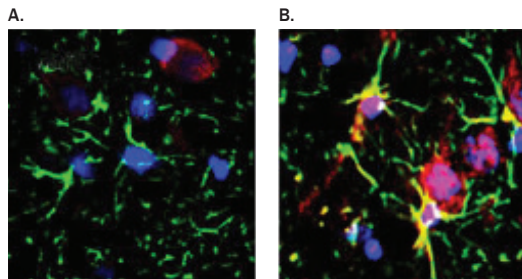


C9RANT in Human Cerebellum and Hippocampus. C9RANT, a newly identified protein that abnormally accumulates in brains of subjects afflicted with c9FTD/ALS, was detected in immersion-fixed paraffin-embedded sections of human hippocampus (A) and cerebellum (B) from individuals with c9FTD/ALS using a Rabbit Anti-C9RANT Polyclonal Antibody (Novus Biologicals, Catalog # NBP2-25018). The hippocampal tissue (A) was stained using a fluorescently-labeled secondary antibody (green) and then counterstained with DAPI (blue). The cerebellar tissue (B) was stained using HRP and DAB (brown), and counterstained with hematoxylin (blue). Images courtesy of Dr. Tania Gendron and Kevin Bieniek, Mayo Graduate School.

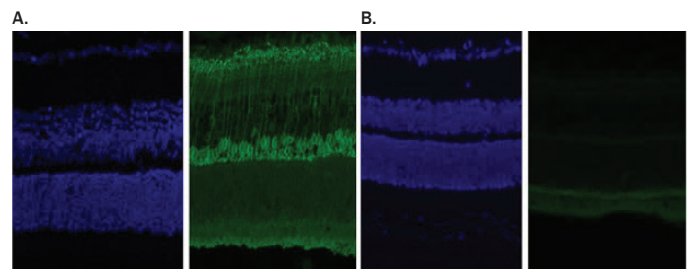


NF2/Merlin in Human Cerebellum. Neurofibromin 2 (NF2)/Merlin was detected in immersion-fixed paraffin-embedded sections of human cerebellum (A) and in immersion-fixed SK-HEP-1 human liver endothelial cell line (B) using a Goat Anti-Human NF2/Merlin Antigen Affinity-Purified Polyclonal Antibody (Catalog # AF5616). Prior to incubation with the primary antibody, the cerebellar tissue (A) was subjected to heat-induced epitope retrieval using Antigen Retrieval Reagent-Basic (Catalog # CTS013). The tissue was stained using the Anti-Goat HRP-DAB Cell & Tissue Staining Kit (Catalog # CTS008; brown) and counterstained with hematoxylin (blue). The SK-HEP-1 cells (B) were stained with NorthernLights™ (NL) 557-Conjugated Donkey Anti-Goat IgG Secondary Antibody (Catalog # NL001; red) and counterstained with DAPI (blue). All cited reagents are from R&D Systems.

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Detection of TNF- α in the Dentate Gyrus of LPS-Injected Rats. TNF- α was detected in the brain (dentate gyrus) of rats that received an intraperitoneal injection of either saline (A) or lipopolysaccharide (B) using a Goat Anti-Rat TNF- α Affinity-Purified Polyclonal Antibody (R&D Systems, Catalog # AF-510-NA). The tissue was stained using an Alexa Fluor® 594-conjugated donkey anti-goat IgG secondary antibody (red) and counterstained with Hoechst 33342 (blue). The tissue was also co-stained for GFAP expression (green). Images from Fu, H.Q. et al. (2014) PLoS One 9:e106331.



mGluR6 is Down-Regulated in SIRT6-KO Retina. mGluR6 was detected in whole retina from wild-type (A) and SIRT6 knock-out (B) mice using a Rabbit Anti-Rat/Mouse Metabotropic Glutamate Receptor 6 (mGluR6) Antigen Affinity-Purified Polyclonal Antibody (Novus Biologicals, Catalog # NB300-189). The tissue was stained using an Alexa Fluor 488-conjugated rabbit anti-goat IgG secondary antibody (green) and counterstained with DAPI (blue). Images from Dafne et al. (2014) PLoS One 9: e98831.

SELECT ANTIBODIES

Molecule	Catalog #	Brand	Species	Clonality	Applications	Conjugates
1433γ	NB100-406	Novus Biologicals	Human	Mono	WB, ICC	No
5HT1A Receptor	NB100-92418	Novus Biologicals	Human, Mouse, Rat	Poly	WB, ICC, IHC	No
5HT1D Receptor	NB100-56349	Novus Biologicals	Human, Mouse, Rat	Poly	WB	No
5HT1E Receptor	NBP1-90320	Novus Biologicals	Human	Poly	WB, IHC	No
5HT1F Receptor	NBP1-46541	Novus Biologicals	Human, Mouse, Rat	Poly	WB, IHC	No
5HT4 Receptor	NBP1-78403	Novus Biologicals	Human	Poly	ICC	Yes
5HT7 Receptor	NB100-56352	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC	No
ABCA1	NB400-105	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC, IHC, FC, ELISA	Yes
ABCG1	NB400-132	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, IHC, <i>In Vitro</i>	Yes
ABCG2/CD338	NB100-2177	Novus Biologicals	Human	Mono	WB, ICC, IHC	No
Aβ (Total)	NBP2-13075	Novus Biologicals	Human, Mouse, Rat	Mono	WB, ICC, IHC, ELISA, IP	Yes
Aβ40	NB300-225	Novus Biologicals	Human, Mouse	Poly	WB, ICC, IP	No
Aβ42	NB300-226	Novus Biologicals	Human, Mouse	Poly	WB, IP	No
Agrin	AF550	R&D Systems	Rat	Poly	WB, IHC, ELISA, B/N	Yes
AIF-1/Iba1	MAB7308	R&D Systems	Mouse	Mono	IHC	No
α-Internexin	NB300-216	Novus Biologicals	Human, Mouse, Rat +	Mono	WB, IHC	No
AMIGO2	AF2374	R&D Systems	Mouse	Poly	WB	Yes
Ankyrin 1	NBP2-33806	Novus Biologicals	Human, Mouse	Poly	WB, IHC	No
ApoE	NB110-60531	Novus Biologicals	Human, Mouse, Rat (Negative)	Mono	WB, IHC, FC, ELISA, IP	Yes
ApoE (E4 isoform)	NBP1-49529	Novus Biologicals	Human	Mono	WB, ELISA, IP	Yes
ApoE Receptor 2	NB100-2216	Novus Biologicals	Human, Mouse +	Poly	WB, ICC	Yes
APP	AF1168	R&D Systems	Mouse	Poly	WB, IHC	No
Aromatase	NB100-1596	Novus Biologicals	Human +	Poly	WB, ICC	Yes
Artemin	MAB10851	R&D Systems	Mouse	Mono	WB	No
Attractin	AF7238	R&D Systems	Mouse	Poly	WB, ICC	No
Axin-1	AF3287	R&D Systems	Human, Mouse, Rat	Poly	WB	Yes
Axin-2	MAB6078	R&D Systems	Mouse	Mono	ICC	No
Axl	AF854	R&D Systems	Mouse	Poly	WB	Yes
BACE-1 (Ectodomain)	MAB9311	R&D Systems	Human, Mouse	Mono	IP, B/N	No
BACE-2	MAB4097	R&D Systems	Human	Mono	IHC	Yes
BAI1	NB110-81586	Novus Biologicals	Human, Mouse	Poly	WB, ICC, IHC	Yes
BDNF	NB100-98682	Novus Biologicals	Human, Mouse, Rat	Poly	WB, ICC, IHC	No
BDNF (Pro region)	MAB3175	R&D Systems	Mouse	Mono	IHC	No
Bestrophin 1	NB300-164	Novus Biologicals	Human, Mouse, Rat +	Mono	WB, ICC, IHC, IP	No
BMAL1	NB100-2288	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC, IHC, ChIP	Yes
BrdU	NB500-169	Novus Biologicals	Non-Species Specific	Mono	ICC, IHC, FC	Yes
C9RANT	NBP2-25018	Novus Biologicals	All Species	Poly	WB, ICC, IHC, ELISA	No
Calcium Sensing Receptor	NB100-1830	Novus Biologicals	Human, Mouse, Rat +	Mono	WB, ICC, IHC, FC, ELISA, IP, RI	Yes
Calreticulin	NB600-101	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC, IHC, IP, B/N, DB	No
Calsyntenin-2	AF5480	R&D Systems	Mouse	Poly	IHC	No
Cannabinoid Receptor 1	NB120-23703	Novus Biologicals	Human, Mouse, Rat	Poly	WB, ICC, IHC	No
Cannabinoid Receptor 2	NBP2-15689	Novus Biologicals	Human	Poly	WB, ICC, IHC	No
CASK	NBP1-47648	Novus Biologicals	Human, Mouse, Rat +	Mono	WB, IHC, IP	No
Caspase-3	NB500-210	Novus Biologicals	Human, Mouse, Rat	Mono	WB, IHC	No
Caspase-3 (Cleaved)	NB100-56113	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, IHC, FC, IP	No
β-Catenin	NBP1-54467	Novus Biologicals	Human, Mouse, Rat +	Mono	WB, ICC, IHC, IP	No

Species Key: + Additional Species Available **Applications Key:** B/N (Blocking/Neutralization), CD (Cell Depletion), ChIP (Chromatin Immunoprecipitation), DB (Dot Blot), ELISA (ELISA Capture and/or Detection), FC (Flow Cytometry), ICC (Immunocytochemistry), IHC (Immunohistochemistry), IP (Immunoprecipitation), PEP-ELISA (Peptide-ELISA), TCS (T Cell Stimulation), TSI (Inhibition of T Cell Function), RI (Radioimmunoassay), and WB (Western blot)

SELECT ANTIBODIES

Molecule	Catalog #	Brand	Species	Clonality	Applications	Conjugates
Cav 1.2	NBP1-42820	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, IP, B/N	Yes
CD3 ϵ	MAB484	R&D Systems	Mouse	Mono	FC, IP, TCS, CD	Yes
CD4	MAB6439	R&D Systems	Rat	Mono	WB	Yes
CD8 α	MAB116	R&D Systems	Mouse	Mono	ICC, FC, IP, CD, TSI	Yes
CD11b	MAB1124	R&D Systems	Mouse	Mono	ICC, IHC, FC, IP	Yes
CD11b	NB110-89474	Novus Biologicals	Human, Mouse, Rat	Poly	WB, ICC, IHC, FC	Yes
CD11b/c	NB110-40766	Novus Biologicals	Human, Mouse	Poly	WB, ICC, IHC, FC	Yes
CD14	AF982	R&D Systems	Mouse	Poly	WB	Yes
CD25/IL-2 Receptor α	AF2438	R&D Systems	Mouse	Poly	WB, IHC, ELISA, B/N	Yes
CD31	NB600-562	Novus Biologicals	Human +	Mono	WB, IHC, ELISA	No
CD34	NB600-1071	Novus Biologicals	Mouse	Mono	WB, ICC, IHC, FC, ELISA, IP	Yes
CD45	AF114	R&D Systems	Mouse	Poly	WB, ICC, FC	Yes
CD68/SR-D1	MAB20401	R&D Systems	Mouse	Mono	ICC, FC	Yes
c-Fos	AF7254	R&D Systems	Mouse	Poly	WB	No
CLOCK	NB100-126	Novus Biologicals	Human, Mouse	Poly	WB, ChIP	No
c-Myc	NB600-302	Novus Biologicals	Human, Mouse +	Mono	WB, ICC, IHC, FC, ELISA, ChIP, IP	Yes
Complexin-1/2	AF7787	R&D Systems	Human, Mouse, Rat	Poly	WB, ICC	No
Contactin-1	AF7549	R&D Systems	Human, Mouse, Rat	Poly	WB	No
Contactin-2	AF4439	R&D Systems	Mouse, Rat	Poly	WB, IHC	No
Contactin-3	AF5539	R&D Systems	Human, Mouse, Rat	Poly	WB, ICC	No
Crystallin AB	NB100-2519	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC	Yes
DAT1	NBP2-22164	Novus Biologicals	Mouse, Rat, (Human Negative)	Mono	WB, ICC, IHC, ELISA, IP	Yes
DISC1	NB110-40775	Novus Biologicals	Mouse, Rat	Poly	IHC	Yes
DOPA Decarboxylase	NB300-174	Novus Biologicals	Rat +	Poly	WB, IHC	No
Dopamine Receptor D1	NB110-60017	Novus Biologicals	Mouse, Rat	Mono	WB, ICC, IHC	Yes
Dopamine Receptor D2	NLS1405	Novus Biologicals	Human +	Poly	IHC	No
Dopamine Receptor D3	NBP1-02398	Novus Biologicals	Human	Poly	IHC	No
Dopamine Receptor D4	NBP1-00779	Novus Biologicals	Human, Mouse, Rat	Poly	WB, ICC, IHC	No
Dopamine Receptor D5	NB110-60019	Novus Biologicals	Mouse, Rat, Human (Negative)	Mono	WB, ICC, IHC	Yes
Doublecortin	NBP1-92684	Novus Biologicals	Human, Mouse, Rat +	Mono	WB, ICC	Yes
DRP1	NB110-55288	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC, IHC, IP	Yes
EGF Receptor/ErbB1	AF231	R&D Systems	Mouse	Poly	WB, FC, ELISA, IP	Yes
Enolase 2/Neuron-Specific Enolase	MAB5169	R&D Systems	Mouse	Mono	WB, IHC, IP	No
eNos	NB300-500	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, IHC	No
EphB2	AF467	R&D Systems	Human, Mouse	Poly	WB, ICC, IHC, FC	Yes
FABP7	NBP2-27073	Novus Biologicals	Human, Mouse +	Poly	WB, IHC	No
FUS	NBP1-50623	Novus Biologicals	Human, Mouse	Poly	WB, ICC, IHC	Yes
GABA A Receptor α 1	NB300-191	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC, IP, DB	No
GABA A Receptor α 2	NB300-192	Novus Biologicals	Human, Mouse, Rat +	Poly	WB	No
GABA A Receptor α 3	NBP1-87499	Novus Biologicals	Human, Mouse, Rat	Poly	WB, IHC	No
GABA A Receptor α 4	NB300-194	Novus Biologicals	Mouse, Rat	Poly	WB, IHC	No
GABA A Receptor α 5	NB300-195	Novus Biologicals	Human, Mouse, Rat +	Poly	WB	No
GABA A Receptor α 6	NB300-196	Novus Biologicals	Mouse, Rat	Poly	WB, ICC	No

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SELECT ANTIBODIES

Molecule	Catalog #	Brand	Species	Clonality	Applications	Conjugates
GABA A Receptor Associated Protein	NB300-158	Novus Biologicals	Human, Rat	Poly	WB	No
GABA A Receptor $\beta 3$	AF5590	R&D Systems	Mouse	Poly	WB, IHC	No
GABA A Receptor $\gamma 1$	NBP1-91003	Novus Biologicals	Human	Poly	IHC	No
GABA A Receptor $\gamma 2$	NB300-190	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, IHC	No
GABA B Receptor 1	NB300-160	Novus Biologicals	Human	Poly	WB	No
GABA B Receptor 1	MAB7000	R&D Systems	Rat	Mono	IHC	No
GABA B Receptor 2	NB300-159	Novus Biologicals	Human	Poly	WB	No
GABA B Receptor 2	AF1188	R&D Systems	Rat	Poly	WB, IHC	No
GABA Receptor $\gamma 3$	NB100-56662	Novus Biologicals	Human, Mouse, Rat	Poly	WB	No
GAD1/GAD67	AF2086	R&D Systems	Mouse	Poly	WB, IHC	Yes
GAD2/GAD65	AF2247	R&D Systems	Mouse	Poly	WB, IHC	Yes
GAP43	NB300-143	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC, IHC	Yes
GAPDH	NB300-221	Novus Biologicals	Human, Mouse, Rat +	Mono	WB, ICC, IHC	No
Gephyrin/GPHN	MAB7519	R&D Systems	Human, Mouse	Mono	WB	No
GFAP	NB300-141	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC, IHC	No
GFP	AF4240	R&D Systems	All Species	Poly	WB, ICC, FC, IP	Yes
GFR α -1	AF560	R&D Systems	Rat	Poly	WB, IHC, B/N	Yes
GFR α -2	AF429	R&D Systems	Human, Mouse	Poly	WB, IHC, B/N	Yes
GFR α -4	AF1677	R&D Systems	Mouse	Poly	WB, IHC	Yes
Glutamate Dehydrogenase 2/GLUD2	MAB8027	R&D Systems	Human, Mouse, Rat	Mono	WB	No
Glutamine Synthetase	NB110-41404	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, IHC	No
GPR120	NBP1-00858	Novus Biologicals	Human, Mouse, Rat	Poly	WB, ICC	No
HIP1	NB300-203	Novus Biologicals	Human, Mouse	Mono	WB, ICC, IHC, ChIP	No
HOMER	NBP1-44999	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC	No
iNos	NB300-605	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC, IHC	No
Ki67	NB500-170	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC, IHC	Yes
Kif 2 α	NB500-180	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC, IP, DB	No
Kv1	NBP1-42788	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, IP	Yes
Kv1.2	NBP1-42802	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC, IP	Yes
Kv1.2	NBP1-42818	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, IP, B/N	No
Kv3.1	NBP1-42819	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, IP, B/N	Yes
Laminin	NB300-144	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC, IHC	Yes
Lin28	NBP1-49537	Novus Biologicals	Human, Mouse	Poly	WB, ICC, IHC	No
LINGO-1	MAB30861	R&D Systems	Mouse	Mono	ICC, FC	No
LINGO-2	MAB36791	R&D Systems	Mouse	Mono	WB, ICC, FC	No
LRRK2	NB300-268	Novus Biologicals	Human, Mouse +	Poly	WB, ICC, IHC, IP	Yes
MAP2	NB300-213	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC, IHC	No
Mash1	NBP1-51269	Novus Biologicals	Human, Mouse, Rat	Poly	WB, IHC	No
MBL	AF2307	R&D Systems	Mouse	Poly	WB, ELISA	Yes
MBP	MAB42281	R&D Systems	Mouse	Mono	WB	No
Melatonin Receptor 1A	NBP1-71113	Novus Biologicals	Human, Mouse, Rat	Poly	WB, ICC, IHC, ELISA	No
Melatonin Receptor 1B	NLS932	Novus Biologicals	Human, Mouse, Rat	Poly	WB, IHC	Yes
MELK	NBP1-19598	Novus Biologicals	Human, Mouse, Rat	Poly	WB, ICC, IHC	No
Meteorin	AF3475	R&D Systems	Mouse	Poly	WB, ICC	Yes
Methionine Sulfoxide	NBP1-06707	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC, IHC	No

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SELECT ANTIBODIES

Molecule	Catalog #	Brand	Species	Clonality	Applications	Conjugates
mGluR1	MAB4836	R&D Systems	Mouse	Mono	IHC	No
mGluR1a	NB110-39033	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC, IHC	No
mGluR2	MAB4676	R&D Systems	Mouse	Mono	WB, FC	No
mGluR3	AF4668	R&D Systems	Mouse	Poly	WB, IHC	Yes
mGluR4	AF7387	R&D Systems	Mouse	Poly	IHC, FC	No
mGluR5	MAB4514	R&D Systems	Mouse	Mono	WB, FC	No
mGluR6	NB300-189	Novus Biologicals	Mouse, Rat	Poly	WB, ICC, IHC	Yes
mGluR7	MAB4405	R&D Systems	Mouse	Mono	FC	No
mGluR8	MAB5277	R&D Systems	Mouse	Mono	WB, IHC	No
Mitofilin	NB100-1919	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC, IP, DB	No
Mitofusin 1	NBP1-71775	Novus Biologicals	Human, Mouse, Rat	Mono	WB, ICC, IHC, FC	Yes
MMP-3	AF513	R&D Systems	Human	Poly	WB, IHC, ELISA, IP	Yes
μ Opioid Receptor	NBP1-96656	Novus Biologicals	Human, Mouse, Rat	Mono	WB, IHC, FC, IP	No
Musashi 1	NB100-1759	Novus Biologicals	Human, Mouse, Rat	Poly	WB, ICC, IHC	No
Myelin Basic Protein	NB600-717	Novus Biologicals	Human, Mouse, Rat +	Mono	WB, ICC, IHC, ELISA, RI	No
N-Cadherin	NBP1-48309	Novus Biologicals	Human, Mouse, Rat	Mono	WB, ICC, IHC, IP	Yes
NCAM-1/CD56	NBP2-15184	Novus Biologicals	Human, Rat +	Mono	WB, ICC, IHC, FC, ELISA, IP	No
NCAM-1/CD56	AF6070	R&D Systems	Mouse, Rat	Poly	WB	No
Nectin-1	AF2880	R&D Systems	Human, Mouse	Poly	WB	Yes
Nectin-2/CD112	AF3869	R&D Systems	Mouse	Poly	WB	No
Nectin-3	AF3064	R&D Systems	Mouse	Poly	WB, IHC, FC	Yes
Nectin-4	AF2659	R&D Systems	Mouse	Poly	WB, IHC, FC	Yes
Neprilysin	MAB11821	R&D Systems	Mouse	Mono	WB	No
Neprilysin	AF1182	R&D Systems	Mouse	Poly	WB, IHC, FC, ELISA, IP	Yes
Neprilysin (Ectodomain)	MAB1126	R&D Systems	Human, Mouse	Mono	WB, IHC	No
Nestin	NB300-265	Novus Biologicals	Human (Rodent Negative)	Poly	WB, ICC	Yes
Nestin	NB300-266	Novus Biologicals	Human (Rodent Negative)	Mono	WB, ICC, IHC, FC	Yes
Netrin-1	AF1109	R&D Systems	Mouse	Poly	WB, B/N	Yes
Netrin-4	AF1132	R&D Systems	Mouse	Poly	WB, IHC, B/N	Yes
Netrin-G1a	AF1166	R&D Systems	Mouse	Poly	WB	No
Netrin-G2a	MAB2744	R&D Systems	Mouse	Mono	WB	No
NeuN	NBP1-77686	Novus Biologicals	Human, Mouse, Rat	Poly	ICC, IHC	Yes
Neuregulin-3/NRG3	AF753	R&D Systems	Mouse	Poly	WB, IHC	Yes
Neurexin 1β	AF4524	R&D Systems	Rat	Poly	WB	Yes
Neurexin 3	AF5269	R&D Systems	Human, Mouse	Poly	WB, IHC	Yes
Neurexophilin-1	AF4208	R&D Systems	Rat	Poly	WB	No
Neurexophilin-3	AF5098	R&D Systems	Human, Mouse, Rat	Poly	WB	No
Neuritin	AF283	R&D Systems	Mouse	Poly	WB, ICC	No
Neurocan	AF5800	R&D Systems	Mouse, Rat	Poly	WB, IHC	Yes
NeuroD1	AF2746	R&D Systems	Human, Mouse	Poly	WB, ICC	Yes
NeuroD2	AF2775	R&D Systems	Human, Mouse	Poly	WB	No
Neurofascin	AF3235	R&D Systems	Human, Mouse, Rat	Poly	WB, IHC	No
Neurofibromin 1	NB300-155	Novus Biologicals	Human, Mouse, Rat	Poly	WB, ICC, IHC	No
Neurogenin-1	MAB3524	R&D Systems	Mouse	Mono	WB	No
Neurogenin-2	MAB3314	R&D Systems	Human, Rat	Mono	IHC	No
Neurogenin-3	AF3444	R&D Systems	Mouse	Poly	WB	Yes

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Molecule	Catalog #	Brand	Species	Clonality	Applications	Conjugates
Neuroglycan C	AF5665	R&D Systems	Mouse, Rat	Poly	WB, IHC	No
Neurogranin	AF7947	R&D Systems	Human, Mouse, Rat	Poly	WB, IHC	No
Neurokinin 1 Receptor	NB300-101	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC, IHC	No
Neurokinin B	NB300-201	Novus Biologicals	Human, Mouse, Rat	Poly	WB, ICC, IHC	Yes
Neuroigin 1	AF4340	R&D Systems	Human, Rat	Poly	WB, IHC	Yes
Neuroigin 2	AF5645	R&D Systems	Human, Rat	Poly	WB	No
Neuroigin 3	AF6088	R&D Systems	Human, Mouse, Rat	Poly	WB, IHC	No
Neuroigin 4	AF5158	R&D Systems	Mouse	Poly	WB, IHC	No
Neurolysin	AF3814	R&D Systems	Human, Mouse, Rat	Poly	WB, IP	No
Neuromedin B Receptor	MAB47281	R&D Systems	Mouse	Mono	IHC	No
Neuronal Pentraxin Receptor	AF4414	R&D Systems	Mouse	Poly	WB, IHC	No
Neuron-Specific β -III Tubulin	MAB1195	R&D Systems	All Species	Mono	WB, ICC	Yes
Neurophysin II	AF009	R&D Systems	Mouse	Poly	WB, IHC	No
Neuropilin-1	AF566	R&D Systems	Mouse, Rat	Poly	WB, IHC, FC, B/N	Yes
Neuropilin-2	AF567	R&D Systems	Mouse, Rat	Poly	WB, B/N	Yes
Neuroplastin 65	AF5360	R&D Systems	Human, Mouse	Poly	WB, IHC	Yes
Neuropoietin	AF2709	R&D Systems	Mouse	Poly	WB	Yes
Neurturin	AF477	R&D Systems	Human, Mouse	Poly	WB, IHC, B/N	No
NF2/Merlin	MAB5616	R&D Systems	Mouse	Mono	WB	No
NF κ B p105/p50	NB100-56583	Novus Biologicals	Human	Mono	WB, IHC	Yes
NF κ B p65	NB100-56647	Novus Biologicals	Human, Mouse, Rat	Poly	WB	No
NF-H	NB300-135	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC, IHC, ELISA	No
NF-L	NB300-131	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC, IHC	No
NF-M	NB300-133	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC, IHC	No
NG2/MCSP	MAB6689	R&D Systems	Mouse	Mono	IHC	No
β -NGF	AF-556-NA	R&D Systems	Rat	Poly	WB, IHC, ELISA, B/N	Yes
NGF Receptor	AF1157	R&D Systems	Mouse	Poly	WB, IHC	Yes
NGL-1/LRRC4C	MAB4899	R&D Systems	Mouse	Mono	IHC	Yes
NGL-3/LRRC4B	MAB69191	R&D Systems	Mouse	Mono	WB	No
NgR2/NgRH1	AF2776	R&D Systems	Mouse	Poly	WB	No
NgR3/NgRH2	MAB2920	R&D Systems	Mouse	Mono	WB	Yes
Nicastrin	MAB53781	R&D Systems	Mouse	Mono	WB	No
NMDA Receptor 1	NB300-118	Novus Biologicals	Human, Mouse, Rat	Mono	WB, ICC, IHC, IP	No
NMDA Receptor 2A	NB300-105	Novus Biologicals	Human, Mouse, Rat	Poly	WB, IHC, IP	No
NMDA Receptor 2B	NB300-106	Novus Biologicals	Human, Mouse, Rat	Poly	WB, ICC, IHC, FC, IP	No
nNOS	AF2416	R&D Systems	Mouse	Poly	WB, IHC	No
Noggin	AF719	R&D Systems	Mouse	Poly	WB, ICC, IHC	Yes
Nogo Receptor	AF1440	R&D Systems	Mouse	Poly	WB	Yes
Nogo-A (aa 2-172)	AF3098	R&D Systems	Rat	Poly	WB, IHC	No
Nogo-B	AF6034	R&D Systems	Human, Mouse	Poly	WB, IHC	No
Nogo-C	MAB5766	R&D Systems	Mouse	Mono	IHC	No
Notch1	NB100-78486	Novus Biologicals	Human, Mouse, Rat (Negative)	Mono	WB, ICC, IHC, FC, IP	No
NPR-1	MAB3974	R&D Systems	Mouse	Mono	IHC	No
NRAGE	AF3835	R&D Systems	Human, Mouse, Rat	Poly	WB	No
NrCAM	AF2034	R&D Systems	Mouse	Poly	WB, IHC	Yes

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Molecule	Catalog #	Brand	Species	Clonality	Applications	Conjugates
NRG1 Isoform GGF2	AF2015	R&D Systems	Mouse	Poly	WB	Yes
NRG1- α /HRG1- α	AF-296-NA	R&D Systems	Mouse	Poly	WB, IHC, B/N	Yes
NRG1- β 1/HRG1- β 1	AF-396-NA	R&D Systems	Mouse	Poly	WB, IHC, B/N	Yes
NSE	NB110-58870	Novus Biologicals	Human, Mouse, Rat	Poly	WB, ICC	No
NSP 5 α 3 α	NB100-517	Novus Biologicals	Human	Poly	WB, ICC, IP	Yes
NT-3	MAB267	R&D Systems	Mouse	Mono	ELISA, B/N	No
NT-4	AF-268-NA	R&D Systems	Mouse	Poly	WB, IHC, B/N	Yes
NTF3	NBP1-47892	Novus Biologicals	Human	Mono	WB, ICC, IHC	No
NUMB	NB500-178	Novus Biologicals	Human, Mouse +	Poly	WB, ICC	Yes
NUR77	NB100-56745	Novus Biologicals	Human, Mouse	Poly	WB, ICC, ChIP, IP	No
Oct-3/4	MAB1759	R&D Systems	Human, Mouse	Mono	WB, ICC, FC	No
Oct-4A	NL17591R	R&D Systems	Mouse	Mono	ICC	Yes
Olig 1	NBP1-28666	Novus Biologicals	Mouse, Rat	Poly	WB, ICC, IHC, IP	No
Olig 2	NBP1-28667	Novus Biologicals	Human, Mouse, Rat	Poly	WB, ICC, IHC, IP	No
Olig 3	NBP1-88627	Novus Biologicals	Human	Poly	WB, ICC, IHC	No
Oligodendrocyte Marker O1	MAB1327	R&D Systems	Human, Mouse, Rat +	Mono	ICC, FC	No
Oligodendrocyte Marker O4	MAB1326	R&D Systems	Human, Mouse, Rat +	Mono	ICC, FC	No
OMgp	AF1674	R&D Systems	Mouse	Poly	WB	No
OPA1	NB110-55290	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, IHC	Yes
Optineurin	NBP1-84682	Novus Biologicals	Human, Mouse	Poly	WB, ICC, IHC	No
p75	NB110-58000	Novus Biologicals	Human, Mouse, Rat (Negative)	Mono	WB, ICC, IHC, IP	No
MAGUK (pan)	NBP1-48306	Novus Biologicals	Human, Mouse, Rat +	Mono	WB, IHC, IP	No
Park7(DJ-1)	NB100-483	Novus Biologicals	Human, Mouse, Rat	Poly	WB, ICC, IHC, IP	No
Parkin	AF1438	R&D Systems	Mouse	Poly	WB, IHC	No
Parkin	NB300-429	Novus Biologicals	Human	Poly	WB, IP	No
PAX6	NB300-750	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC, IHC, IP	No
PCNA	NB500-106	Novus Biologicals	Human, Mouse, Rat +	Mono	WB, ICC, IHC, FC, ELISA, IP	Yes
PDGF Receptor α	AF1062	R&D Systems	Mouse	Poly	WB, IHC, B/N	Yes
PDGF Receptor β	AF1042	R&D Systems	Mouse	Poly	WB, IHC	Yes
PGP9.5/UCHL-1	NB300-676	Novus Biologicals	Human, Mouse	Poly	WB, ICC, IHC	Yes
PINK1	BC100-494	Novus Biologicals	Human, Mouse	Poly	WB, ICC, IHC, PEP-ELISA, IP	No
PPAR γ	NBP1-61399	Novus Biologicals	Human, Mouse, Rat	Poly	WB, IHC, ELISA	No
Presenilin-1 (C-Term)	AF166	R&D Systems	Mouse	Poly	WB, IHC	Yes
Presenilin-1 (N-Term)	MAB1491	R&D Systems	Mouse	Mono	WB	No
Presenilin-2 (C-Term)	AF197	R&D Systems	Mouse	Poly	WB	Yes
Presenilin-2 (N-Term)	AF153	R&D Systems	Mouse	Poly	WB, IHC	No
Progranulin	AF2420	R&D Systems	Mouse	Poly	WB, IHC	Yes
PSD-93	NB300-546	Novus Biologicals	Rat	Poly	WB, ICC, IHC	No
PSD-95	NB300-556	Novus Biologicals	Human, Mouse, Rat +	Mono	WB, ICC, IHC, FC, ChIP, IP, B/N	Yes
RAGE	AF1145	R&D Systems	Mouse	Poly	WB, IHC, B/N	Yes
RbAp48	NBP1-41202	Novus Biologicals	Human	Mono	WB, ICC, IHC, CHIP, IP	Yes
RCAN1	NBP1-46853	Novus Biologicals	Human, Mouse, Rat	Poly	WB, IHC	Yes
Reelin	MAB3820	R&D Systems	Mouse	Mono	WB	No
RGM-A	MAB2458	R&D Systems	Human, Mouse +	Mono	WB	No
RGM-B	AF3630	R&D Systems	Mouse	Poly	WB, FC	No
Rhodopsin	NBP2-25160	Novus Biologicals	Human, Mouse, Rat +	Mono	WB, ICC	No

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SELECT ANTIBODIES

ANTIBODIES

Molecule	Catalog #	Brand	Species	Clonality	Applications	Conjugates
ROBO1	AF1749	R&D Systems	Rat	Poly	WB, IHC	Yes
ROBO2	MAB3147	R&D Systems	Mouse	Mono	WB, ICC, FC	No
ROBO3	AF3076	R&D Systems	Mouse	Poly	WB, IHC	Yes
ROBO4	MAB2454	R&D Systems	Mouse	Mono	WB, FC	No
RPE65	NB100-355	Novus Biologicals	Human, Mouse, Rat +	Mono	WB, ICC, IHC, FC	Yes
R-Spondin 1	MAB4658	R&D Systems	Human, Mouse	Mono	WB	No
R-Spondin 2	MAB3266	R&D Systems	Mouse	Mono	B/N	No
R-Spondin 3	AF35001	R&D Systems	Mouse	Poly	B/N	No
R-Spondin 4	AF4106	R&D Systems	Mouse	Poly	B/N	No
S100A4	NBP1-95606	Novus Biologicals	Human (Mouse, Rat Negative)	Mono	WB, ICC, IHC, FC, IP	No
S100A9	NB110-89726	Novus Biologicals	Human, Mouse, Rat	Poly	WB, ICC, IHC	No
S100B	NBP1-41373	Novus Biologicals	Human, Mouse, Rat	Mono	WB, IHC	No
Semaphorin 3E	AF3239	R&D Systems	Human, Mouse	Poly	WB, ICC, IHC	No
Semaphorin 4D	MAB52351	R&D Systems	Mouse	Mono	FC	Yes
Serotonin N-Acetyltransferase	NB100-135	Novus Biologicals	Human	Poly	WB, ICC	Yes
SHANK1	NB300-167	Novus Biologicals	Human, Mouse, Rat	Poly	WB, ICC, IHC	No
SHH	NBP2-22139	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC, IHC	No
SLC31A1	NB100-402	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC, IHC	Yes
Slit2	AF5444	R&D Systems	Mouse	Poly	IHC	No
Slit3	AF3629	R&D Systems	Human, Mouse, Rat	Poly	WB, B/N	No
SLITRK1	MAB30091	R&D Systems	Mouse	Mono	IHC	No
SLITRK2	AF2657	R&D Systems	Mouse	Poly	WB	Yes
SLITRK5	AF2587	R&D Systems	Mouse	Poly	WB	Yes
SLITRK6	AF7317	R&D Systems	Mouse	Poly	WB	No
SMAD6	NB100-56440	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, IHC	No
SMN	NB100-1936	Novus Biologicals	Human, Mouse, Rat +	Mono	WB, ICC, IHC, ELISA, IP	Yes
Smoothed	NBP2-24543	Novus Biologicals	Human, Mouse +	Poly	WB, IHC	No
SNAP23	AF6306	R&D Systems	Mouse	Poly	WB, ICC	No
SNAP25	AF5946	R&D Systems	Human, Mouse, Rat	Poly	WB, ICC	No
SNAP29	AF7869	R&D Systems	Mouse	Poly	WB, ICC	No
Snapi	MAB7795	R&D Systems	Human, Mouse	Mono	WB	No
SOD1	NBP2-24915	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC, IHC	No
Sodium Potassium ATPase $\alpha 1$	NB300-146	Novus Biologicals	Human, Mouse, Rat +	Mono	WB, ICC, IHC, FC	No
Somatostatin Receptor 1	NB120-2366	Novus Biologicals	Mouse, Rat	Poly	ICC, IHC	No
Somatostatin Receptor 2	NB300-157	Novus Biologicals	Human, Mouse, Rat	Poly	WB, ICC, IHC, FC, IP	No
Somatostatin Receptor 3	NB100-74538	Novus Biologicals	Human	Poly	WB, ICC, IHC	No
Somatostatin Receptor 4	NB100-74539	Novus Biologicals	Human, Mouse	Poly	WB, ICC, IHC	No
Somatostatin Receptor 5	NB100-56498	Novus Biologicals	Human +	Poly	WB, IHC	No
SorLA	AF5699	R&D Systems	Human, Mouse	Poly	WB, IHC	No
Sortilin	AF2934	R&D Systems	Mouse	Poly	WB, IHC, B/N	Yes
SOX2	NB110-37235	Novus Biologicals	Human, Mouse +	Poly	WB, ICC, IHC, FC	Yes
Spectrin $\beta 3$	NB110-58346	Novus Biologicals	Human	Poly	WB, IHC, IP	Yes
Substance P	NB300-187	Novus Biologicals	Human, Mouse, Rat	Poly	ICC, IHC	No
SUMO1	AF3289	R&D Systems	Human, Mouse	Poly	WB	No
SUMO2/3/4	AF3020	R&D Systems	Human, Mouse	Poly	WB	No

Species Key: + Additional Species Available **Applications Key:** B/N (Blocking/Neutralization), CD (Cell Depletion), ChIP (Chromatin Immunoprecipitation), DB (Dot Blot), ELISA (ELISA Capture and/or Detection), FC (Flow Cytometry), ICC (Immunocytochemistry), IHC (Immunohistochemistry), IP (Immunoprecipitation), PEP-ELISA (Peptide-ELISA), TCS (T Cell Stimulation), TSI (Inhibition of T Cell Function), RI (Radioimmunoassay), and WB (Western blot)

SELECT ANTIBODIES

Molecule	Catalog #	Brand	Species	Clonality	Applications	Conjugates
Survivin	NB500-201	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC, IHC, ELISA, ChIP, IP	Yes
Synapsin I	NB300-104	Novus Biologicals	Human, Mouse, Rat	Poly	WB, ICC, IHC, IP	No
Synaptophysin	NB300-653	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC, IHC, IP	No
Synaptotagmin-1	MAB43641	R&D Systems	Rat	Mono	WB, IHC, IP	No
Syntabulin	AF5544	R&D Systems	Mouse	Poly	WB	No
Syntaxin 1A	AF7237	R&D Systems	Human, Mouse, Rat	Poly	WB, ICC	No
Syntaxin 1B	MAB6848	R&D Systems	Human, Mouse, Rat	Mono	WB	No
Syntaxin 5	AF5687	R&D Systems	Mouse	Poly	WB	No
Syntaxin 7	AF5478	R&D Systems	Human, Mouse, Rat	Poly	WB, ICC	No
Syntaxin 12	MAB6617	R&D Systems	Mouse	Mono	WB	No
Syntaxin 16	AF5648	R&D Systems	Mouse	Poly	WB	No
Syntaxin-BP1	AF5675	R&D Systems	Human, Mouse, Rat	Poly	WB, IHC	No
Synuclein- α	NBP1-26380	Novus Biologicals	Human, Mouse	Mono	WB, IHC, FC	Yes
Synuclein- α	AF1338	R&D Systems	Mouse	Poly	WB, IHC	Yes
Synuclein- β	MAB5528	R&D Systems	Mouse	Mono	WB, IHC	No
Synuclein- γ	MAB5745	R&D Systems	Mouse	Mono	WB, IHC	No
TACE/ADAM17 (Cytosolic)	MAB2129	R&D Systems	Mouse	Mono	WB, IP	No
TACE/ADAM17 (Ectodomain)	MAB9301	R&D Systems	Mouse	Mono	WB, FC, IP	No
TARDBP	NB110-55376	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC, IHC	Yes
Tau	NBP2-25162	Novus Biologicals	Human, Mouse, Rat	Mono	WB, ICC	No
Tau (p Ser416)	NB110-93503	Novus Biologicals	Rat	Poly	WB	No
TBR1	NBP2-15133	Novus Biologicals	Mouse	Poly	WB	No
Tenascin C	NB110-68136	Novus Biologicals	Human, Mouse, Rat	Mono	WB, ICC, IHC, FC, ELISA	Yes
TRAF6	NB100-56179	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, IHC, IP	No
TrkA	AF1056	R&D Systems	Rat	Poly	WB, IHC	Yes
TrkB	AF1494	R&D Systems	Mouse	Poly	WB, IHC, B/N	Yes
TrkC	AF1404	R&D Systems	Mouse	Poly	WB, IHC, B/N	Yes
TRPA1	NB110-40763	Novus Biologicals	Human, Mouse +	Poly	WB, ICC, IHC	Yes
TRPM2	NB110-81601	Novus Biologicals	Mouse, Rat	Poly	WB, ICC, IHC	Yes
TRPM8	NB200-145	Novus Biologicals	Human, Mouse +	Poly	WB, ICC, IHC, ELISA	No
TRPV1	NBP1-71774	Novus Biologicals	Human, Mouse	Poly	ICC, IHC	Yes
Tubulin β 3	NBP1-42568	Novus Biologicals	Human	Mono	WB, ICC, FC, ELISA	No
Tyrosine Hydroxylase	AF7566	R&D Systems	Human, Mouse, Rat	Poly	WB, ICC	No
Tyrosine Hydroxylase	NB300-109	Novus Biologicals	Human, Mouse +	Poly	WB, ICC, IHC	No
UNC13A	AF6214	R&D Systems	Human, Mouse	Poly	WB	No
VAMP1/Synaptobrevin 1	NB100-63292	Novus Biologicals	Human +	Mono	WB, IHC, ELISA	No
VAMP2/Synaptobrevin 2	NB300-595	Novus Biologicals	Mouse, Rat +	Poly	WB, IHC, IP	No
VEGF	MAB293	R&D Systems	Mouse	Mono	WB, IHC, ELISA, B/N	No
VEGF 165	AF-293-NA	R&D Systems	Mouse	Poly	WB, ICC, B/N	Yes
VEGF Receptor 1	AF471	R&D Systems	Mouse	Poly	WB, B/N	Yes
VEGF Receptor 2	MAB3572	R&D Systems	Mouse	Mono	FC, B/N	No
Vimentin	NB300-223	Novus Biologicals	Human, Mouse, Rat	Poly	WB, ICC, IHC	No
VMAT2	NBP1-69750	Novus Biologicals	Human, Mouse, Rat	Poly	WB, ICC, IHC	Yes
Xct	NB300-318	Novus Biologicals	Human, Mouse, Rat	Poly	WB, ICC, IHC, FC	Yes

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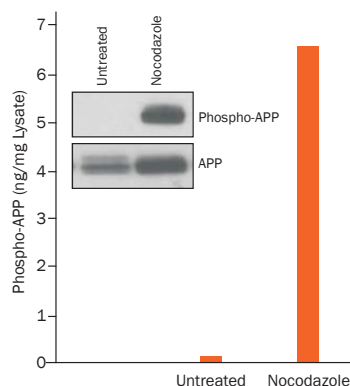
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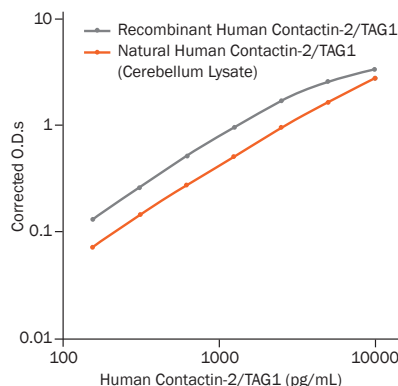
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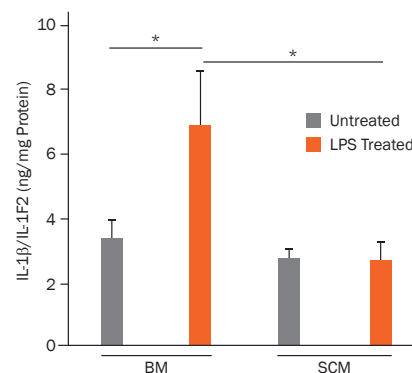
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Nocodazole-Induced Phosphorylation of APP (T668). Levels of phosphorylated APP (T668) were quantified in lysates prepared from the C6 rat glial cell line that was either untreated or treated with nocodazole using the Human/Mouse/Rat Phospho-APP (T668) DuoSet IC ELISA Development System (Catalog # DYC2508; bar graph). The same lysates were also immunoblotted (inset) using either a Rabbit Anti-Human/Mouse Phospho-APP (T668) Antigen Affinity-Purified Polyclonal Antibody (Catalog # AF2508) or a Goat Anti-Human APP Pan Specific Antigen Affinity-Purified Polyclonal Antibody (Catalog # AF1168). The DuoSet IC ELISA results correlate with the relative amounts of phosphorylated APP detected by Western blot. All cited reagents are from R&D Systems.



Recognition of Recombinant and Natural Human Contactin-2/TAG1. Serial dilutions of a Contactin-2/TAG1 protein standard (gray line), which was generated from Recombinant Human Contactin-2/TAG1 (Catalog # 1714-CN), or natural Contactin-2/TAG1 present in human cerebellum tissue lysates (orange line) were quantified using the Human Contactin-2/TAG1 DuoSet ELISA Development System (Catalog # DY1714). The DuoSet ELISA detected both recombinant and natural proteins in a parallel manner across a range of concentrations. All cited reagents are from R&D Systems.



LPS Specifically Induces Brain Microglia to Secrete IL-1β/IL-1F2. Primary microglia cell cultures prepared from either brain (BM) or spinal cord (SCM) of post-natal day1 Sprague-Dawley rats were treated with lipopolysaccharide (LPS) for 24 hours or remained untreated. Levels of IL-1β/IL-1F2 were measured in the media from treated (orange bars) and untreated (gray bars) BM and SCM cultures using the Rat IL-1β/IL-1F2 DuoSet ELISA Development System (R&D Systems, Catalog # DY501). * $P < 0.03$ BM LPS Treated versus BM Untreated, and BM LPS Treated versus SCM LPS Treated. Graph from Baskar Jesudasan, S.J. et al. (2014) PLoS One 9:e99443.

SELECT ELISAs

Molecule	Species	Catalog #	Type
14-3-3ζ	Human	DY2669	DuoSet
ACE/CD143	Human	DACE00	Quantikine
ACE/CD143	Mouse	DY1513	DuoSet
Activin A	Human, Mouse, Rat	DAC00B	Quantikine
ADAM12	Human	DAD120	Quantikine
ADAMTS1	Human	DY2197	DuoSet
ADAMTS13	Human	DADT130	Quantikine
Aggrecan	Human	DY1220	DuoSet
Agrin	Rat	DY550	DuoSet
ALCAM/CD166	Mouse	DY1172	DuoSet
ALCAM/CD166	Human	DY656	DuoSet
Apolipoprotein E	Human	DAPE00	Quantikine
APP	Human	DY850	DuoSet
Artemin	Human	DY2589	DuoSet
Attractin	Human	DATRN0	Quantikine
Axl	Human	DY154	DuoSet
Axl	Mouse	DY854	DuoSet
BACE-1	Human	DY931	DuoSet
BDNF	Human	DBD00	Quantikine
BDNF (Pro form)	Human	DY3175	DuoSet
BMP-2	Human	DY355	DuoSet
Butyrylcholinesterase	Human	DBCHE0	Quantikine
Calbindin D	Human	DCALD0	Quantikine
Carbonic Anhydrase IX	Human	DY2188	DuoSet
Caspase-1	Human	DCA100	Quantikine
Caspase-3 (Active)	Human	KM300	Quantikine
CCL2/MCP-1	Human	DCP00	Quantikine
CCL2/JE/MCP-1	Mouse, Rat	MJE00	Quantikine
CCL3/MIP-1α	Human	DMA00	Quantikine
CCL3/MIP-1α	Mouse	MMA00	Quantikine
CCL4/MIP-1β	Human	DMB00	Quantikine
CCL4/MIP-1β	Mouse	MMB00	Quantikine
CCL5/RANTES	Human	DRN00B	Quantikine
CCL5/RANTES	Mouse, Rat	MMR00	Quantikine
CCL7/MCP-3	Human	DCC700	Quantikine
CCL11/Eotaxin	Human	DTX00	Quantikine
CCL11/Eotaxin	Mouse	MME00	Quantikine
CCL12/MCP-5	Mouse	MCC120	Quantikine
CCL17/TARC	Human	DDN00	Quantikine
CCL17/TARC	Mouse	MCC170	Quantikine
CCL18/PARC	Human	DCL180	Quantikine
CCL20/MIP-3α	Human	DM3A00	Quantikine
CCL20/MIP-3α	Mouse	MCC200	Quantikine
CCL22/MDC	Human	DMD00	Quantikine
CCL22/MDC	Mouse	MCC220	Quantikine
CCL24/Eotaxin-2	Human	DCC240B	Quantikine
CCL26/Eotaxin-3	Human	DCC260	Quantikine
CCL27/CTACK	Human	DCC270	Quantikine

SELECT ELISAs

Molecule	Species	Catalog #	Type
CD14	Human	DC140	Quantikine
CD14	Mouse	MC140	Quantikine
CD23/Fc epsilon RII	Human	DCD230	Quantikine
CD25/IL-2 R α	Human	DR2A00	Quantikine
CD40 Ligand/TNFSF5	Human	DCDL40	Quantikine
CD40/TNFRSF5	Human	DCCD40	Quantikine
CD40/TNFRSF5	Mouse	MCCD40	Quantikine
CD117/c-kit	Human	DSCR00	Quantikine
CD163	Human	DC1630	Quantikine
Clusterin	Human	DCLU00	Quantikine
Clusterin	Mouse	MCLU00	Quantikine
CNTF	Human	DNT00	Quantikine
CNTF	Rat	DY557	DuoSet
Contactin-2/TAG1	Human	DY1714	DuoSet
C-Reactive Protein	Human	DCRP00	Quantikine
C-Reactive Protein	Mouse	MCRP00	Quantikine
CX3CL1/Fractalkine	Human	DCX310	Quantikine
CX3CL1/Fractalkine	Mouse	MCX310	Quantikine
CXCL1/GRO α	Human	DGR00	Quantikine
CXCL1/GRO α	Mouse	MKC00B	Quantikine
CXCL1/GRO α	Rat	RCN100	Quantikine
CXCL2/GRO β	Mouse	MM200	Quantikine
CXCL2/GRO β	Rat	RCN300	Quantikine
CXCL3/GRO γ	Rat	RCN200	Quantikine
CXCL4/PF4	Human	DPF40	Quantikine
CXCL4/PF4	Mouse	MCX400	Quantikine
CXCL5/ENA-78	Human	DX000	Quantikine
CXCL6/GCP-2	Human	DGC00	Quantikine
CXCL8/IL-8	Human	D8000C	Quantikine
CXCL9/MIG	Human	DCX900	Quantikine
CXCL9/MIG	Mouse	MCX900	Quantikine
CXCL10/IP-10	Human	DIP100	Quantikine
CXCL10/IP-10/CRG-2	Mouse	MCX100	Quantikine
CXCL11/I-TAC	Human	DCX110	Quantikine
CXCL12/SDF-1 α	Human	DSA00	Quantikine
CXCL12/SDF-1 α	Mouse	MCX120	Quantikine
CXCL13/BLC/BCA-1	Human	DCX130	Quantikine
CXCL13/BLC/BCA-1	Mouse	MCX130	Quantikine
CXCL16	Human	DCX160	Quantikine
Dkk-1	Mouse	DY1765	DuoSet
Dkk-1	Human	DY1906	DuoSet
Dkk-3	Human	DY1118	DuoSet
Dkk-4	Human	DY1269	DuoSet
DR3/TNFRSF25	Human	DY943	DuoSet
DR6/TNFRSF21	Human	DY144	DuoSet
E-Cadherin	Human	DCADE0	Quantikine
EGF	Human	DEG00	Quantikine
EGF	Mouse	MEG00	Quantikine

SELECT ELISAs

Molecule	Species	Catalog #	Type
EGF R/ErbB1	Human	DEGFR0	Quantikine
Endoglin/CD105	Mouse	MNDG00	Quantikine
Endothelin-1	Multi-Species	DET100	Quantikine
Enolase 2	Human	DENL20	Quantikine
E-Selectin/CD62E	Human	DSLE00	Quantikine
E-Selectin/CD62E	Mouse	MES00	Quantikine
Fas Ligand/TNFSF6	Human	DFL00	Quantikine
Fas Ligand/TNFSF6	Mouse	MFL00	Quantikine
Fas/TNFRSF6/CD95	Human	DFS00	Quantikine
α -Fetoprotein	Mouse	MAFP00	Quantikine
FGF acidic	Human	DFA00B	Quantikine
FGF basic	Human	DFB50	Quantikine
FGF basic	Mouse, Rat	MFB00	Quantikine
FGF-4	Human	DY235	DuoSet
FGF-9	Human	DY273	DuoSet
FGF-19	Human	DF1900	Quantikine
FGF-21	Human	DF2100	Quantikine
FGF-21	Mouse, Rat	MF2100	Quantikine
FGF-23	Human	DY2604	DuoSet
FGF-BP	Human	DY1593	DuoSet
Fibronectin	Human	DFBN10	Quantikine
Gas1	Mouse	DY2644	DuoSet
Gas6	Mouse	MGAS60	Quantikine
GASP-1/WFIKKRNP	Human	DY2070	DuoSet
GASP-2/WFIKKRNP	Human	DY2136	DuoSet
GDF-5/BMP-14	Mouse	DY853	DuoSet
GDF-8/Myostatin	Multi-Species	DGDF80	Quantikine
GDF-15	Human	DGD150	Quantikine
GDF-15	Mouse, Rat	MGD150	Quantikine
GDNF	Human	DY212	DuoSet
Glypican 3	Human	DGLY30	Quantikine
GM-CSF	Human	DGM00	Quantikine
GM-CSF	Mouse	MGM00	Quantikine
ICAM-1/CD54	Human	DCD540	Quantikine
ICAM-1/CD54	Mouse	MIC100	Quantikine
ICAM-1/CD54	Rat	RIC100	Quantikine
ICAM-1/CD54 (Non Allele-Specific)	Human	DCIM00	Quantikine
IFN- γ	Human	DIF50	Quantikine
IFN- γ	Mouse	MIF00	Quantikine
IFN- γ	Rat	RIF00	Quantikine
IGFBP-2	Human	DGB200	Quantikine
IGFBP-3	Human	DGB300	Quantikine
IGFBP-3	Mouse	MGB300	Quantikine
IGF-I	Human	DG100	Quantikine
IGF-I	Mouse, Rat	MG100	Quantikine
IGF-I (Free)	Human	DFG100	Quantikine
IL-1 α /IL-1F1	Human	DLA50	Quantikine
IL-1 α /IL-1F1	Mouse	MLA00	Quantikine

SELECT ELISAs

Molecule	Species	Catalog #	Type
IL-1 α /IL-1F1	Rat	RRA00	Quantikine
IL-1 β /IL-1F2	Human	DLB50	Quantikine
IL-1 β /IL-1F2	Mouse	MLB00C	Quantikine
IL-1 β /IL-1F2	Rat	RLB00	Quantikine
IL-1 β /IL-1F2 (Pro form)	Human	DLBP00	Quantikine
IL-1 RII	Human	DR1B00	Quantikine
IL-1ra/IL-1F3	Human	DRA00B	Quantikine
IL-1ra/IL-1F3	Mouse	MRA00	Quantikine
IL-2	Human	D2050	Quantikine
IL-2	Mouse	M2000	Quantikine
IL-2	Rat	R2000	Quantikine
IL-3	Human	D3000	Quantikine
IL-3	Mouse	M3000	Quantikine
IL-4	Human	D4050	Quantikine
IL-4	Mouse	M4000B	Quantikine
IL-4	Rat	R4000	Quantikine
IL-5	Human	D5000B	Quantikine
IL-5	Mouse	M5000	Quantikine
IL-6	Human	D6050	Quantikine
IL-6	Mouse	M6000B	Quantikine
IL-6	Rat	R6000B	Quantikine
IL-6 R α	Human	DR600	Quantikine
IL-6 R α	Mouse	MR600	Quantikine
IL-7	Mouse	M7000	Quantikine
IL-10	Human	D1000B	Quantikine
IL-10	Mouse	M1000B	Quantikine
IL-10	Rat	R1000	Quantikine
IL-11	Human	D1100	Quantikine
IL-12 p70	Human	D1200	Quantikine
IL-12 p70	Mouse	M1270	Quantikine
IL-12/IL-23 p40 (Allele-Specific)	Mouse	M1240	Quantikine
IL-12/IL-23 p40 (Non Allele-Specific)	Mouse	MP400	Quantikine
IL-12/IL-23 p40 Homodimer	Human	DP400	Quantikine
IL-13	Human	D1300B	Quantikine
IL-13	Mouse	M1300CB	Quantikine
IL-13 R α 2	Mouse	M13RA2	Quantikine
IL-15	Human	D1500	Quantikine
IL-16	Human	D1600	Quantikine
IL-17/IL-17A	Human	D1700	Quantikine
IL-17/IL-17A	Mouse	M1700	Quantikine
IL-17A/F Heterodimer	Mouse	M17AF0	Quantikine
IL-18 BPa	Human	DBP180	Quantikine
IL-19	Human	D1900	Quantikine
IL-20	Human	DL200	Quantikine
IL-22	Human	D2200	Quantikine
IL-22	Mouse, Rat	M2200	Quantikine
IL-23	Human	D2300B	Quantikine
IL-23	Mouse	M2300	Quantikine

SELECT ELISAs

Molecule	Species	Catalog #	Type
IL-27 p28/IL-30	Mouse	M2728	Quantikine
IL-33	Human	D3300	Quantikine
IL-33	Mouse, Rat	M3300	Quantikine
IL-34	Human	D3400	Quantikine
IL-34	Mouse	M3400	Quantikine
KGF/FGF-7	Human	DKG00	Quantikine
LAP (TGF- β 1)	Human	DLAP00	Quantikine
M-CSF	Human	DMC00B	Quantikine
M-CSF	Mouse	MMC00	Quantikine
Meteorin	Mouse	DY3475	DuoSet
Meteorin-like/METRNL	Mouse	DY6679	DuoSet
MMP-2 (Total)	Human, Mouse, Rat, Porcine, Canine	MMP200	Quantikine
MMP-3 (Total)	Human	DMP300	Quantikine
MMP-3 (Total)	Mouse	MMP300	Quantikine
MMP-7 (Total)	Human	DMP700	Quantikine
MMP-8 (Total)	Human	DMP800	Quantikine
MMP-9 (Total)	Human	DMP900	Quantikine
MMP-9 (Total)	Mouse	MMPT90	Quantikine
MMP-9 (Total)	Rat	RMP900	Quantikine
MMP-9/Lipocalin-2 Complex	Human	DM9L20	Quantikine
MSP/MST1	Mouse	MMSP0	Quantikine
Myeloperoxidase	Human	DMYE00B	Quantikine
Myeloperoxidase	Mouse	DY3667	DuoSet
NCAM-1/CD56	Human	DY2408	DuoSet
Nectin-4	Human	DNEC40	Quantikine
Neprilysin/CD10	Mouse	DY1126	DuoSet
Neprilysin/CD10	Human	DY1182	DuoSet
Neuregulin-1 β 1	Human	DY377	DuoSet
Neuropilin-1	Human	DNRP10	Quantikine
β -NGF	Human	DY256	DuoSet
β -NGF	Rat	DY556	DuoSet
NGF R/TNFRSF16	Mouse	DY1157	DuoSet
NGF R/TNFRSF16	Human	DY367	DuoSet
NT-3	Human	DY267	DuoSet
NT-4	Human	DY268	DuoSet
Park7/DJ-1	Human	DY3995	DuoSet
Park7/DJ-1	Mouse	DY8136	DuoSet
PDGF-AA	Human, Mouse	DAA00B	Quantikine
PDGF-AA	Human	DY221	DuoSet
PDGF-AB	Human	DHD00C	Quantikine
PDGF-AB	Human	DY222	DuoSet
PDGF-AB	Mouse, Rat	MHD00	Quantikine
PDGF-BB	Human	DBB00	Quantikine
PDGF-BB	Mouse, Rat	MBB00	Quantikine
PDGF-CC	Human	DCC00	Quantikine
PDGF-DD	Human	DDD00	Quantikine
Pentraxin 2	Mouse	MPTX20	Quantikine
Pentraxin 3	Human	DPTX30	Quantikine

SELECT ELISAs

Molecule	Species	Catalog #	Type
Pentraxin 3	Mouse	MPTX30	Quantikine
Persephin	Human	DY2388	DuoSet
Presenilin-1 (N-Terminal)	Human	DY149	DuoSet
Progranulin	Human	DPGRN0	Quantikine
Progranulin	Mouse	DY2557	DuoSet
RAGE	Human	DRG00	Quantikine
RAGE	Rat	DY1616	DuoSet
RAGE	Mouse	MRG00	Quantikine
Resistin	Human	DRSN00	Quantikine
RGM-A	Mouse, Rat	MRGMA0	Quantikine
RGM-B	Human	DY3630	DuoSet
ROBO1	Rat	DY1749	DuoSet
ROBO3	Human	DY3076	DuoSet
R-Spondin 1	Human	DY4645	DuoSet
R-Spondin 3	Human	DY3500	DuoSet
R-Spondin 4	Human	DY4575	DuoSet
SCF/c-kit Ligand	Human	DCK00	Quantikine
SCF/c-kit Ligand	Mouse	MCK00	Quantikine
Semaphorin 3E	Human	DY3239	DuoSet
Serpin E1/PAI-1	Human	DTSE100	Quantikine
Sonic Hedgehog	Mouse	DY461	DuoSet
Sonic Hedgehog (N-Terminus)	Mouse	MSHH00	Quantikine
SP-D	Mouse	MSFPD0	Quantikine
Survivin	Human	DSV00	Quantikine
TACE/ADAM17	Human	DY930	DuoSet
TFPI	Human	DTFP10	Quantikine
TGF- α	Human	DTGA00	Quantikine
TGF- β 1	Human	DB100B	Quantikine
TGF- β 1	Mouse, Rat, Porcine, Canine	MB100B	Quantikine
TGF- β 2	Human	DB250	Quantikine
TGF- β 2	Mouse, Rat, Porcine, Canine	MB200	Quantikine
Tie-1	Human	DY5907	DuoSet
Tie-2	Human	DTE200	Quantikine
TNF RI/TNFRSF1A	Human	DRT100	Quantikine
TNF RI/TNFRSF1A	Mouse, Rat	MRT10	Quantikine
TNF RII/TNFRSF1B	Human	DRT200	Quantikine
TNF RII/TNFRSF1B	Mouse, Rat	MRT20	Quantikine
TNF- α	Human	DTA00C	Quantikine
TNF- α	Rat	RTA00	Quantikine
TRAIL/TNFSF10	Human	DTRL00	Quantikine
Ubiquitin+1	Human	DY703	DuoSet
VCAM-1/CD106	Human	DVC00	Quantikine
VCAM-1/CD106	Mouse	MVC00	Quantikine
VEGF	Human	DVE00	Quantikine
VEGF	Mouse	MMV00	Quantikine
VEGF	Rat	RRV00	Quantikine
VEGF-C	Human	DVEC00	Quantikine
VEGF-D	Human	DVED00	Quantikine

MULTIANALYTE TESTING

Proteome Profiler™ Antibody Arrays

R&D Systems Proteome Profiler Antibody Arrays are highly efficient, qualitative tools that utilize a simple two-site sandwich assay principle to detect the presence of multiple analytes in a single sample.

Cost-Effective Screening Method

- Each array offers a quick and inexpensive analysis of many analytes simultaneously, in less time than it takes to perform a Western blot.

No Specialized Equipment Needed

- They are designed to utilize the same data collection equipment used for Western blots.

Wide Selection

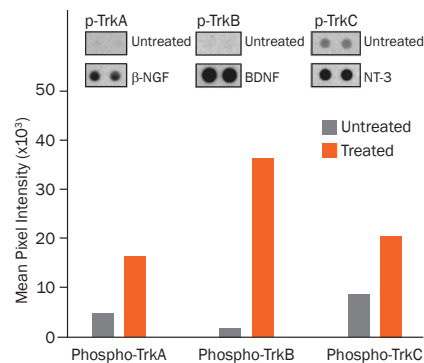
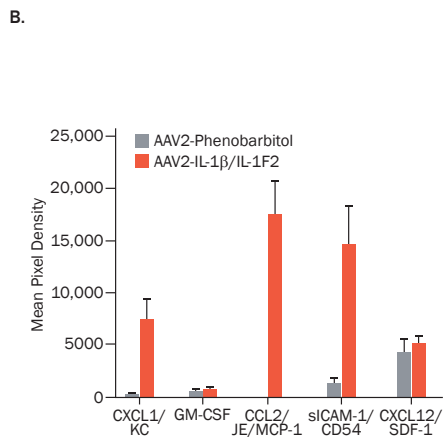
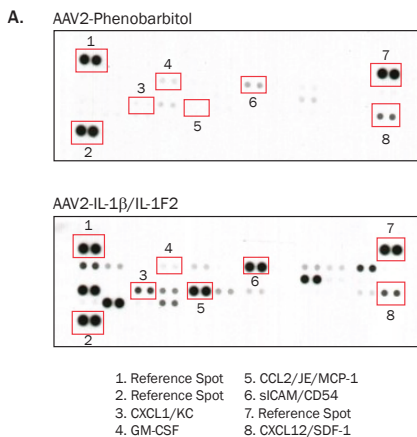
- Choose from over 25 arrays for the detection of both intracellular and extracellular factors from a broad variety of sample types.

User-Friendly Design

- Each array is stamped with an identification number for easy record keeping and contains reference spots in three corners for orientation purposes.

Multiple Detection Methods Available

- Arrays can utilize either chemiluminescence or LI-COR® infrared fluorescence detection.*



Cytokine Expression Induced by IL-1β/IL-1F2 in Mouse Brain. C57BL/6 mice received a bilateral intrahippocampal injection of adeno-associated virus (AAV2) vector expressing either a single chain antibody to phenobarbital (for a control) or IL-1β/IL-1F2. After 4 weeks, brains of the mice were collected, and cytokine expression in brain homogenates was analyzed using the Proteome Profiler Mouse Cytokine Antibody Array (R&D Systems, Catalog # ARY006). Representative arrays (A) and histogram profiles (B) for select analytes from control (gray bars) and IL-1β/IL-1F2 treated (orange bars) mice. Data were generated by analysis of the mean pixel density of individual antibody spots using image software analysis. Data courtesy of Dr. Jonathan Cherry, University of Rochester Medical Center, Rochester, NY.

Neurotrophin-Induced Receptor Tyrosine Kinase Phosphorylation. The C6 rat glial cell line was transfected with human TrkA, TrkB, or TrkC. Cells were untreated (gray bars) or treated (orange bars) with Recombinant Human β-NGF (Catalog # 256-GF), Recombinant Human/Mouse/Rat/Canine/Equine BDNF (Catalog # 248-BD), or Recombinant Human NT-3 (Catalog # 267-N3) for 5 minutes. Cell lysates were assessed for the relative levels of phosphorylation of TrkA, TrkB, TrkC, and nine other receptor tyrosine kinases (RTKs) using the Proteome Profiler Human Phospho-RTK Array Kit (Catalog # ARY001B). Representative images of the pre-spotted nitrocellulose membranes are shown following chemiluminescent detection (inset). All cited reagents are from R&D Systems.

*Select arrays only.

Luminex® Screening Assays

R&D Systems Luminex Screening Assays are designed to maximize multiplexing capacity and flexibility while maintaining assay specificity.

Most Flexible

- Choose from over 214 analytes.
- All analytes are available in either the polystyrene or magnetic microparticle format.

Largest Luminex Multiplex Selection Available

- These screening assays allow you to maximize the use of your samples by simultaneously analyzing up to 100 analytes.

Unique Analytes Offered

- Nearly 30% of our portfolio of analytes are unique to us.

Luminex Performance Assays

R&D Systems Luminex Performance Assays are designed to maximize assay accuracy and precision while preserving the benefits of multiplexing.

Most Accurate

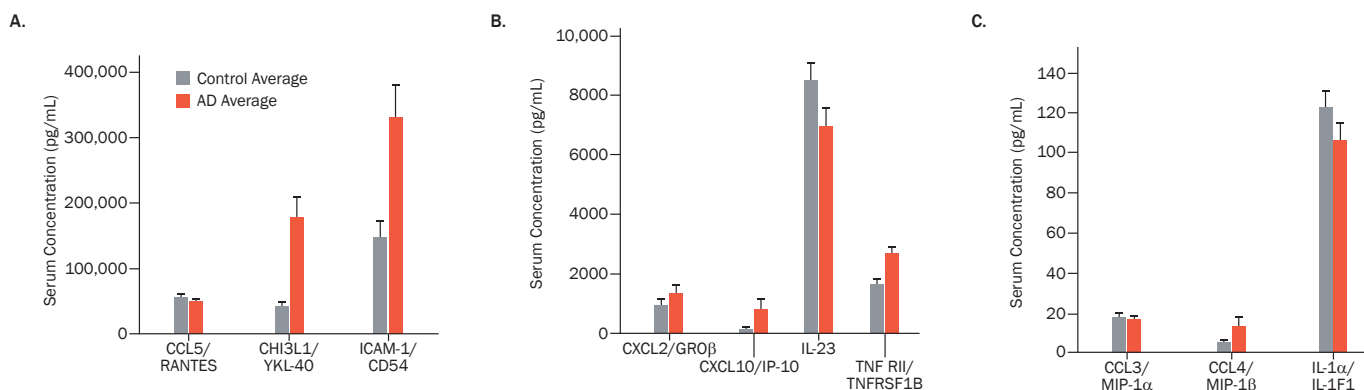
- Panel development and validation testing for these assays are similar to our gold-standard Quantikine ELISA Assays.

Flexible

- Select panels are available in either the polystyrene or magnetic microparticle format.

Customizable to Fit Your Needs

- Users can choose their analytes of interest from established panels and select “premixed” or “end-user mixed” options.



Detection of Neuroinflammation and Alzheimer's Disease Biomarkers in Human Serum. The Human Luminex Screening Assay (R&D Systems, Catalog # LXSAH) was used to measure 31 markers of neuroinflammation and Alzheimer's disease (AD) pathology in human serum samples. Samples were collected from individuals with AD (orange bars; N=20) and from apparently healthy individuals (gray bars; N=20); no medical histories were available. Histogram profiles for select analytes measured at high (A), moderate (B), and low (C) expression levels.

PROTEOME PROFILER ANTIBODY ARRAYS

Products	Description	Catalog #	Size
Human Angiogenesis Array Kit	Contains 4 membranes - each spotted in duplicate with 55 different angiogenesis antibodies	ARY007	1 Kit
Activin A, ADAMTS1, Angiogenin, Angiopoietin-1, Angiopoietin-2, Angiostatin/Plasminogen, Amphiregulin, Artemin, CCL2/MCP-1, CCL3/MIP-1 α , Coagulation Factor III/Tissue Factor, CXCL4/PF4, CXCL8/IL-8, CXCL16, DPPIV/CD26, EGF, EG-VEGF/PK1, Endoglin/CD105, Endostatin, Endothelin-1, FGF acidic, FGF basic, FGF-4, GDNF, GM-CSF, HB-EGF, HGF, IGFBP-1, IGFBP-2, IGFBP-3, IL-1 β /IL-1F2, KGF/FGF-7, LAP (TGF- β 1), Leptin, MMP-8, MMP-9, NRG1- β 1/HRG1- β 1, Pentraxin 3/TSG-14, PD-ECGF/Thymidine Phosphorylase, PDGF-AA, PDGF-AB/PDGF-BB, Persephin, PIGF, Prolactin, Serpin B5/Maspin, Serpin E1/PAI-1, Serpin F1/PEDF, Thrombospondin-1, Thrombospondin-2, TIMP-1, TIMP-4, u-Plasminogen Activator/Urokinase, Vasohibin, VEGF, VEGF-C			

Products	Description	Catalog #	Size
Mouse Angiogenesis Array Kit	Contains 4 membranes - each spotted in duplicate with 53 different angiogenesis antibodies	ARY015	1 Kit
ADAMTS1, Amphiregulin, Angiogenin, Angiopoietin-1, Angiopoietin-3, CCL2/JE/MCP-1, CCL3/MIP-1 α , Coagulation Factor III/Tissue Factor, CX3CL1/Fractalkine, CXCL1/KC, CXCL4/PF4, CXCL10/IP-10/CRG-2, CXCL12/SDF-1, CXCL16, Cyr61/CNN1, DLL4, DPPIV/CD26, EGF, Endoglin/CD105, Endostatin, Endothelin-1, FGF acidic, FGF basic, GM-CSF, HB-EGF, HGF, IGFBP-1, IGFBP-2, IGFBP-3, IL-1 α /IL-1F1, IL-1 β /IL-1F2, IL-10, KGF/FGF-7, Leptin, MMP-3 (pro and mature), MMP-8 (pro), MMP-9 (pro and active), NOV/CCN3, Osteopontin (OPN), PD-ECGF/Thymidine Phosphorylase, PDGF-AA, PDGF-AB/BB, Pentraxin-3/TSG-14, PIGF-2, Prolactin, Proliferin, Serpin E1/PAI-1, Serpin F1/PEDF, Thrombospondin-2, TIMP-1, TIMP-4, VEGF, VEGF-B			

Products	Description	Catalog #	Size
Human Apoptosis Array Kit	Contains 4 arrays - each spotted in duplicate with 35 different apoptosis-related antibodies	ARY009	1 Kit
Bad, Bax, Bcl-2, Bcl-x, Pro-Caspase-3, Cleaved Caspase-3, Catalase, Claspin, Clusterin, Cytochrome c, FADD, Fas/TNFRSF6/CD95, HIF-1 α , HO-1/HMOX1, HO-2/HMOX2, HSP27, HSP60, HSP70/HSPA1A, HTRA2/Omi, cIAP-1 (HIAP-2), cIAP-2 (HIAP-1), Livin, p21/CIP1/CDNK1A, p27/Kip1, Phospho-p53 (S15), Phospho-p53 (S46), Phospho-p53 (S392), PON2, Phospho-Rad17 (S635), SMAC/Diablo, Survivin, TNF R1/TNFRSF1A, TRAIL R1/TNFRSF10A, TRAIL R2/TNFRSF10B, XIAP			

Products	Description	Catalog #	Size
Human Cell Stress Array Kit	Contains 4 arrays - each spotted in duplicate with 26 different cell stress-related antibodies	ARY018	1 Kit
ADAMTS1, Bcl-2, Carbonic Anhydrase IX, Cited-2, COX-2, Cytochrome c, Dkk-4, FABP1/L-FABP, HIF-1 α , HIF-2 α /EPAS1, Phospho-HSP27 (S78/S82), HSP60, HSP70/HSPA1A, IDO, Phospho-JNK Pan (T183/Y185), NF κ B1, p21/CIP1/CDKN1A, p27/Kip1, Phospho-p38 α (T180/Y182), Phospho-p53 (S46), PON1, PON2, PON3, Thioredoxin-1, SIRT2, SOD2/Mn-SOD			

Products	Description	Catalog #	Size
Human Chemokine Array Kit	Contains 4 membranes - each spotted in duplicate with 31 different chemokine antibodies	ARY017	1 Kit
CCL1/I-309, CCL2/MCP-1, CCL3/CCL4 (MIP-1 α /MIP-1 β), CCL5/RANTES, CCL7/MCP-3, CCL14/HCC-1/HCC-3, CCL15/MIP-1 β /LKN-1, CCL17/TARC, CCL18/PARC, CCL19/MIP-3 β , CCL20/MIP-3 α , CCL21/6CKine, CCL22/MDC, CCL26/Eotaxin-3, CCL28, Chemerin, CX3CL1/Fractalkine, CXCL1/GRO α , CXCL4/PF4, CXCL5/ENA-78, CXCL7/NAP-2, CXCL8/IL-8, CXCL9/MIG, CXCL10/IP-10, CXCL11/I-TAC, CXCL12/SDF-1, CXCL16, CXCL17/VCC-1, IL-16, Midkine, XCL1/Lymphotactin			

Products	Description	Catalog #	Size
Mouse Chemokine Array Kit	Contains 4 membranes - each spotted in duplicate with 25 different chemokine antibodies	ARY020	1 Kit
CCL2/JE/MCP-1, CCL3/CCL4 (MIP-1 α /MIP-1 β), CCL5/RANTES, CCL6/C10, CCL8/MCP-2, CCL9/10/MIP-1 γ , CCL11/Eotaxin, CCL12/MCP-5, CCL21/6CKine, CCL22/MDC, CCL27/CTACK, CCL28, Chemerin, Complement Component C5a, CX3CL1/Fractalkine, CXCL1/KC, CXCL2/MIP-2, CXCL9/MIG, CXCL10/IP-10/CRG-2, CXCL11/I-TAC, CXCL12/SDF-1, CXCL13/BLC/BCA-1, CXCL16, IL-16, LIX			

Products	Description	Catalog #	Size
Human Cytokine Array Kit, Panel A	Contains 4 arrays - each spotted in duplicate with 36 different cytokine antibodies	ARY005	1 Kit
C5a, CCL1/I-309, CCL2/MCP-1, CCL3/MIP-1 α , CCL4/MIP-1 β , CCL5/RANTES, CD40 Ligand/TNFSF5, CXCL1/GRO α , CXCL8/IL-8, CXCL10/IP-10, CXCL11/I-TAC, CXCL12/SDF-1 α , G-CSF, GM-CSF, ICAM-1/CD54, IFN- γ , IL-1 α /IL-1F1, IL-1 β /IL-1F2, IL-1 α /IL-1F3, IL-2, IL-4, IL-5, IL-6, IL-10, IL-12 p70, IL-13, IL-16, IL-17, IL-17E/IL-25, IL-23, IL-27, IL-32 α , MIF, Serpin E1/PAI-1, TNF- α , TREM-1			

PROTEOME PROFILER ANTIBODY ARRAYS

Products	Description	Catalog #	Size
Human XL Cytokine Array Kit	Contains 4 membranes - each spotted in duplicate with 102 different cytokine antibodies	ARY022	1 Kit
Adiponectin/Acrp30, Aggrecan, Angiogenin, Angiopoietin-1, Angiopoietin-2, BAFF/BLyS/TNFSF13B, BDNF, C5a, CCL2/MCP-1, CCL3/CCL4 (MIP-1 α /MIP-1 β), CCL5/RANTES, CCL7/MCP-3, CCL17/TARC, CCL19/MIP-3 β , CCL20/MIP-3 α , CD14, CD30/TNFRSF8, CD40 Ligand/TNFSF5, Chitinase 3-like 1, Complement Factor D, C-Reactive Protein/CRP, Cripto-1, CXCL1/GRO α , CXCL4/PF4, CXCL5/ENA-78, CXCL8/IL-8, CXCL9/MIG, CXCL10/IP-10, CXCL11/I-TAC, CXCL12/SDF-1 α , Cystatin C, Dkk-1, DPPIV/CD26, EGF, Endoglin/CD105, EMMPRIN/CD147, Fas Ligand/TNFSF6, FGF basic, KGF/FGF-7, FGF-19, Flt-3 Ligand, G-CSF, GDF-15, GM-CSF, Growth Hormone, HGF, ICAM-1/CD54, IFN- γ , IGFBP-2, IGFBP-3, IL-1 α /IL-1F1, IL-1 β /IL-1F2, IL-1 α /IL-1F3, IL-2, IL-3, IL-4, IL-5, IL-6, IL-10, IL-11, IL-12 p70, IL-13, IL-15, IL-16, IL-17A, IL-18 BPa, IL-19, IL-22, IL-23, IL-24, IL-27, IL-31, IL-32 α / β / γ , IL-33, IL-34, Kallikrein 3/PSA, Leptin, LIF, Lipocalin-2/NGAL, M-CSF, MIF, MMP-9, Myeloperoxidase, Osteopontin (OPN), PDGF-AA, PDGF-AB/BB, Pentraxin 3/TSG-14, RAGE, RBP4, Relaxin-2, Resistin, Serpin E1/PAI-1, SHBG, ST2/IL-1 R4, TFF3, Tfr, TGF- α , Thrombospondin-1, TNF- α , uPAR, VEGF, Vitamin D BP			

Products	Description	Catalog #	Size
Mouse Cytokine Array Kit, Panel A	Contains 4 arrays - each spotted in duplicate with 40 different cytokine antibodies	ARY006	1 Kit
C5a, CCL1/TCA-3, CCL2/JE/MCP-1, CCL3/MIP-1 α , CCL4/MIP-1 β , CCL5/RANTES, CCL11/Eotaxin, CCL12/MCP-5, CCL17/TARC, CXCL1/KC, CXCL2/MIP-2, CXCL9/MIG, CXCL10/IP-10/CRG-2, CXCL11/I-TAC, CXCL12/SDF-1 α , CXCL13/BLC/BCA-1, G-CSF, GM-CSF, ICAM-1/CD54, IFN- γ , IL-1 α /IL-1F1, IL-1 β /IL-1F2, IL-1 α /IL-1F3, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-10, IL-12 p70, IL-13, IL-16, IL-17, IL-23, IL-27, IL-32 α , M-CSF, TIMP-1, TNF- α , TREM-1			

Products	Description	Catalog #	Size
Rat Cytokine Array Kit, Panel A	Contains 4 arrays - each spotted in duplicate with 29 different cytokine antibodies	ARY008	1 Kit
CCL3/MIP-1 α , CCL5/RANTES, CCL20/MIP-3 α , CNTF, CXCL1/Fractalkine, CXCL1/CINC-1, CXCL2/CINC-3, CXCL3/CINC-2 α / β , CXCL7/Thymus Chemokine-1, CXCL9/MIG, CXCL10/IP-10, GM-CSF, ICAM-1/CD54, IFN- γ , IL-1 α /IL-1F1, IL-1 β /IL-1F2, IL-1 α /IL-1F3, IL-2, IL-3, IL-4, IL-6, IL-10, IL-13, IL-17, LIX, L-Selectin/CD62L, TIMP-1, TNF- α , VEGF			

Products	Description	Catalog #	Size
Human XL Oncology Array Kit	Contains 4 membranes - each spotted in duplicate with 84 different cancer-related antibodies	ARY026	1 Kit
Amphiregulin, Angiopoietin-1, Angiopoietin-like 4, Axl, Bcl-x, CA125/MUC16, E-Cadherin, VE-Cadherin, CapG, Carbonic Anhydrase IX, Cathepsin B, Cathepsin D, Cathepsin S, CCL2/MCP-1, CCL3/MIP-1 α , CCL7/MCP-3, CCL8/MCP-2, CCL20/MIP-3 α , CD25/IL-2 R α , CD31/PECAM-1, CEACAM-5, CG α / β (HCG), CXCL8/IL-8, Decorin, Dkk-1, DLL1, EGF R/ErbB1, Endoglin/CD105, Endostatin, Enolase 2/Neuron-Specific Enolase, ENPP-2/Autotaxin, eNOS, EpCAM/TROP1, ER α /NR3A1, ErbB2/Her2, ErbB3/Her3, ErbB4/Her4, α -Fetoprotein, FGF basic, FoxC2, FoxO1/FKHR, Galectin-3, GM-CSF, HGF R/c-Met, HIF-1 α , HNF-3 β /FoxA2, HO-1/HMOX1, ICAM-1/CD54, IL-6, IL-18 BPa, Kallikrein 3/PSA, Kallikrein 5, Kallikrein 6/Neurosin, Leptin, Lumican, M-CSF, Mesothelin, MMP-2, MMP-3, MMP-9, MSP/MST1, MUC-1, Nectin-4, Osteopontin (OPN), p27/Kip1, p53, PDGF-AA, Progesterone R/NR3C3, Progranulin, Prolactin, Prostatin/Prss8, E-Selectin/CD62E, Serpin B5/Maspin, Serpin E1/PAI-1, SNAIL, SPARC, Survivin, Tenascin C, Thrombospondin-1, TIE-2, u-Plasminogen Activator/Urokinase, VCAM-1/CD106, VEGF, Vimentin			

Products	Description	Catalog #	Size
Human Phospho-Immunoreceptor Array Kit	Contains 4 arrays - each spotted in duplicate with 59 different antibodies recognizing proteins involved in immunoreceptor signaling	ARY004B	1 Kit
2B4/CD244/SLAMF4, BLAME/SLAMF8, BTLA, CD3 ϵ , CD5, CD6, CD23/Fc ϵ RII, CD28, CD31/PECAM, CD84/SLAMF5, CD229/SLAMF3, CD300A/LMIR1, CD300C/LMIR2, CD300E/LMIR6, CD300F/LMIR3, CEACAM-1/CD66a, CLEC-1, CLEC-2, CRACC/SLAMF7, CTLA-4, DCIR/CLEC4A, Dectin-1/CLEC7A, DNAM-1/CD226, Fc γ RIIIA/CD32a, Fc γ RIIIA/B/CD16a/b, FCRL1/FcRH1, FCRL2/FcRH2, FCRL4/FcRH4, FCRL5/FcRH5, ILT2/CD85j, ILT3/CD85k, ILT4/CD85d, ILT5/CD85a, ILT6/CD85e, Integrin β 3/CD61, KIR2DL4/CD158d, LAIR-1, LAIR-2, MDL-1/CLEC5A, NKp30/NCR3, NKp44/NCR2, NKp46/NCR1, NKp80/KIRF1, NTB-A/SLAMF6, PD-1, SHIP-1, SHP-1, SHP-2, Siglec-2/CD22, Siglec-3/CD33, Siglec-5/CD170, Siglec-7/CD328, Siglec-9, Siglec-10, SIRP- β 1/CD172b, SLAM/CD150, TREM-1, TREM-2, TREML1/TLT-1			

PROTEOME PROFILER ANTIBODY ARRAYS

Products	Description	Catalog #	Size
Human Phospho-Kinase Array Kit	Contains 4 sets of 2 membranes - each spotted in duplicate with antibodies against 43 different kinase phosphorylation sites and 2 related proteins	ARY003B	1 Kit
Akt1/2/3 (S473), Akt1/2/3 (T308), AMPK α 1 (T183), AMPK α 2 (T172), β -Catenin, Chk2 (T68), c-Jun (S63), CREB (S133), EGF R (Y1068), eNOS (S1177), ERK1/2 (T202/Y204, T185/Y187), FAK (Y397), Fgr (Y412), Fyn (Y420), GSK-3 α/β (S21/S9), Hck (Y411), HSP27 (S78/S82), HSP60, JNK1/2/3 (T183/Y185, T221/Y223), Lck (Y394), Lyn (Y397), MSK1/2 (S376/S360), p27/Kip1 (T198), p38 α (T180/Y182), p53 (S15), p53 (S46), p53 (S392), p70 S6 Kinase (T421/S424), PDGF R β (Y751), PLC- γ 1 (Y783), PRA540 (T246), PYK2/FAK2 (Y402), RSK1/2/3 (S380), Src (Y419), STAT2 (Y689), STAT3 (Y705), STAT3 (S727), STAT5a (Y699), STAT5a/b (Y699), STAT5b (Y699), STAT6 (Y641), TOR (S2448), WNK-1 (T60), Yes (Y426)			

Products	Description	Catalog #	Size
Human Phospho-MAPK Array Kit	Contains 4 arrays - each spotted in duplicate with 26 different antibodies recognizing mitogen activated protein kinases (MAPKs) and other kinases	ARY002B	1 Kit
Akt1 (S473), Akt2 (S474), Akt3 (S472), Akt (S473, S474, S472) Pan Specific, CREB (S133), ERK1 (T202/Y204), ERK2 (T185/Y187), GSK-3 α/β (S21/S9), GSK-3 β (S9), HSP27 (S78/S82), JNK1 (T183/Y185), JNK2 (T183/Y185), JNK3 (T221/Y223), JNK (T183/Y185)/(T221/Y223) Pan Specific, MKK3 (S218/T222), MKK6 (S207/T211), MSK2/RSKB (S360), p38 α (T180/Y182), p38 β (T180/Y182), p38 δ (T180/Y182), p38 γ (T183/Y185), p53 (S46), p70 S6 Kinase (T421/S424), RSK1 (S380), RSK2 (S386), TOR (S2448)			

Products	Description	Catalog #	Size
Human Phospho-RTK Array Kit	Contains 4 arrays - each spotted in duplicate with 49 different receptor tyrosine kinase (RTK) antibodies	ARY001B	1 Kit
ALK/CD246, Axl, CD117/c-kit, DDR1, DDR2, Dtk, EGF R, EphA1, EphA2, EphA3, EphA4, EphA5, EphA6, EphA7, EphA10, EphB1, EphB2, EphB3, EphB4, EphB6, ErbB2/Her2, ErbB3/Her3, ErbB4/Her4, FGF R1, FGF R2 α , FGF R3, FGF R4, Flt-3/Flk-2, HGF R/c-MET, IGF-I R, Insulin R/CD220, M-CSF R, Mer, MSP R/Ron, MuSK, PDGF R α , PDGF R β , Ret, ROR1, ROR2, Ryk, Tie-1, Tie-2, TrkA, TrkB, TrkC, VEGF R1/Flt-1, VEGF R2/KDR, VEGF R3/Flt-4			

Products	Description	Catalog #	Size
Mouse Phospho-RTK Array Kit	Contains 4 arrays - each spotted in duplicate with 39 different receptor tyrosine kinase (RTK) antibodies	ARY014	1 Kit
Axl, CD117/c-kit, Dtk, EGF R, EphA1, EphA2, EphA3, EphA6, EphA7, EphA8, EphB1, EphB2, EphB4, EphB6, ErbB2/Her2, ErbB3/Her3, ErbB4/Her4, FGF R2 (IIIc), FGF R3, FGF R4, Flt-3/Flk-2, HGF R/c-MET, IGF-I R, Insulin R/CD220, M-CSF R, Mer, MSP R, MuSK, PDGF R α , PDGF R β , Ret, Tie-1, Tie-2, TrkA, TrkB, TrkC, VEGF R1/Flt-1, VEGF R2/Flk-1, VEGF R3/Flt-4			

Products	Description	Catalog #	Size
Human Pluripotent Stem Cell Array Kit	Contains 8 arrays - each spotted in duplicate with 15 different stem cell marker antibodies	ARY010	1 Kit
E-Cadherin, α -Fetoprotein, GATA-4, Goosecoid, CG α/β (HCG), HNF-3 β /FoxA2, Nanog, Oct-3/4, Otx2, PDX-1/IPF1, Snail, SOX2, SOX17, p63/TP73L, VEGF R2/KDR			

Products	Description	Catalog #	Size
Human Protease Antibody Array Kit	Contains 4 membranes - each spotted in duplicate with 34 different protease antibodies	ARY021	1 Kit
ADAM8, ADAM9, ADAMTS1, ADAMTS13, Cathepsin A, Cathepsin B, Cathepsin C/DPP1, Cathepsin D, Cathepsin E, Cathepsin L, Cathepsin S, Cathepsin V, Cathepsin X/Z/P, DPP1V/CD26, Kallikrein 3/PSA, Kallikrein 5, Kallikrein 6, Kallikrein 7, Kallikrein 10, Kallikrein 11, Kallikrein 13, MMP-1, MMP-2, MMP-3, MMP-7, MMP-8, MMP-9, MMP-12, MMP-13, Neprilysin, Presenilin-1, Proprotein Convertase 9/PCSK9, Proteinase 3/PRTN3, u-Plasminogen Activator/Urokinase			

PROTEOME PROFILER ANTIBODY ARRAYS

Products	Description	Catalog #	Size
Human Protease Inhibitor Kit	Contains 4 membranes - each spotted in duplicate with 34 different protease inhibitor antibodies	ARY023	1 Kit
APP, Cystatin A, Cystatin B, Cystatin C, Cystatin E/M, EMMPRIN/CD147, Fetuin B, HAI-1, HAI-2, HE4/WRDC2, Latexin, Lipocalin-1, Lipocalin-2/NGAL, RECK, Serpin A5, Serpin A8/AGT, Serpin A9/Centerin, Serpin A12, Serpin B5/Maspin, Serpin B6, Serpin B8, Serpin E1/PAI-1, Serpin F1/PEDF, Testican 1/SPOCK1, Testican 2/SPOCK2, TFPI, TFPI-2, TIMP-1, TIMP-2, TIMP-3, TIMP-4, Trappin-2/Elafin			

Products	Description	Catalog #	Size
Human Protease/Protease Inhibitor Array Kit	Contains 4 membranes - 2 spotted in duplicate with antibodies against 34 different proteases and 2 spotted in duplicate with antibodies against 32 different protease inhibitors	ARY025	1 Kit
Protease Inhibitors: APP, Cystatin A, Cystatin B, Cystatin C, Cystatin E/M, EMMPRIN/CD147, Fetuin B, HAI-1, HAI-2, HE4/WRDC2, Latexin, Lipocalin-1, Lipocalin-2/NGAL, RECK, Serpin A5, Serpin A8/AGT, Serpin A9/Centerin, Serpin A12, Serpin B5/Maspin, Serpin B6, Serpin B8, Serpin E1/PAI-1, Serpin F1/PEDF, Testican 1/SPOCK1, Testican 2/SPOCK2, TFPI, TFPI-2, TIMP-1, TIMP-2, TIMP-3, TIMP-4, Trappin-2/Elafin Proteases: ADAM8, ADAM9, ADAMTS1, ADAMTS13, Cathepsin A, Cathepsin B, Cathepsin C/DPP1, Cathepsin D, Cathepsin E, Cathepsin L, Cathepsin S, Cathepsin V, Cathepsin X/Z/P, DPPIV/CD26, Kallikrein 3/PSA, Kallikrein 5, Kallikrein 6/Neurosin, Kallikrein 7, Kallikrein 10, Kallikrein 11, Kallikrein 13, MMP-1, MMP-2, MMP-3, MMP-7, MMP-8, MMP-9, MMP-10, MMP-12, MMP-13, Neprilysin, Presenilin-1, Proprotein Convertase 9/PCSK9, Proteinase 3/PRTN3, u-Plasminogen Activator/Urokinase			

Products	Description	Catalog #	Size
Human Soluble Receptor Antibody Array Kit, Hematopoietic Panel	Contains 4 membranes - 2 spotted in duplicate with 48 different hematopoietic antibodies and 2 spotted in duplicate with 57 common antibodies	ARY011	1 Kit
Hematopoietic Panel: CD5, CD6, CD30/TNFRSF8, CD40/TNFRSF5, CD43, CD48/SLAMF2, CD59, CD84/SLAMF5, CD97, CD163, CD229/SLAMF3, Chitinase 3-like 1, C-Reactive Protein/CRP, CRTAM, CXCL16, DNAM-1, DPPIV/CD26, IFN- γ R2, IL-2 R α , IL-2 R β , IL-6 R, Integrin α 3/CD49c, Integrin α 4/CD49d, Integrin α 5/CD49e, Integrin α 6/CD49f, Integrin α 9, Integrin α E/CD103, Integrin α L/CD11a, Integrin α M/CD11b, Integrin α X/CD11c, LAG-3, MMP-9, MMR/CD206, Myeloperoxidase, Resistin, L-Selectin/CD62L, Siglec-5, Siglec-6/CD327, Siglec-7/CD328, Siglec-9, Siglec-10, TIM-3, TLR2, TLR4, TNF RI/TNFRSF1A, TRACP/PAP/ACP5, TRANCE/RANKL/TNFSF11, TREM-1 Common Analytes Panel: ACE, ADAM8, ADAM9, ADAM10, ALCAM, Amphiregulin, APP Pan Specific, BACE-1, BCAM, C1q R1/CD93, CD9, CD23/Fc ϵ RII, CD31/PECAM-1, CD36/SR-B3, CD40 Ligand/TNFSF5, CD44H, CD58/LFA-3, CD90/Thy1, CD99, CD155/PVR, CEACAM-1, CX3CL1/Fractalkine, CXCL8/IL-8, EMMPRIN, Endoglin/CD105, Epregrulin, Galectin-1, Galectin-3, Galectin-3BP/MAC-2BP, HB-EGF, ICAM-2/CD102, IL-1 RII, IL-15 R α , Integrin β 1/CD29, Integrin β 2/CD18, Integrin β 3/CD61, Integrin β 4/CD104, Integrin β 5, Integrin β 6, JAM-A, Lipocalin-2/NGAL, LOX-1/OLR1, MD-1, MMP-2, NCAM-1/CD56, NCAM-L1, Osteopontin (OPN), PAR1, Pref-1/DLK-1/FA1, RECK, Stabilin-1, TACE/ADAM17, Thrombospondin-1, TIMP-1, TIMP-2, TIMP-3, TNF RII/TNFRSF1B			

Products	Description	Catalog #	Size
Human Soluble Receptor Antibody Array Kit, Non-Hematopoietic Panel	Contains 4 membranes - 2 spotted in duplicate with 62 different non-hematopoietic antibodies and 2 spotted in duplicate with 57 common antibodies	ARY012	1 Kit
Non-Hematopoietic Panel: ADAM15, β IG-H3, BMPRII/ALK-6, Cadherin-4/R-Cadherin, Cadherin-11, Cadherin-13, E-Cadherin, N-Cadherin, P-Cadherin, VE-Cadherin, Cathepsin D, CD40/TNFRSF5, CEACAM-5, CHL1/LICAM-2, Clusterin, Coagulation Factor II/Thrombin, COMP, CRELD2, Desmoglein-2, ECM-1, EGF R/ErbB1, Endoglycan, EpCAM/TROP1, ErbB2/Her2, ErbB3/Her3, ErbB4/Her4, ESAM, Galectin-2, HPRG, Integrin α 3/CD49c, Integrin α 5/CD49e, Integrin α 6/CD49f, Integrin α 9, Integrin α V/CD51, Jagged 1, JAM-B/VE-JAM, JAM-C, LRP-6, MCAM/CD146, MEPE/OF45, MUCDHL, Nectin-2/CD112, Nectin-4, Neurotrimin, Notch-1, NrCAM, Periostin/OSF-2, Podocalyxin, E-Selectin/CD62E, Semaphorin 3A, SREC-I/SCARF1, SREC-II/SCARF2, Stanniocalcin 1, Syndecan-1, Syndecan-4, Thrombospondin-2, TIMP-4, TROP-2, VAP-1, VCAM-1/CD106, VEGF R1/Flt-1, VEGF R2/KDR Common Analytes Panel: ACE, ADAM8, ADAM9, ADAM10, ALCAM, Amphiregulin, APP Pan Specific, BACE-1, BCAM, C1q R1/CD93, CD9, CD23/Fc ϵ RII, CD31/PECAM-1, CD36/SR-B3, CD40 Ligand/TNFSF5, CD44H, CD58/LFA-3, CD90/Thy1, CD99, CD155/PVR, CEACAM-1, CX3CL1/Fractalkine, CXCL8/IL-8, EMMPRIN, Endoglin/CD105, Epregrulin, Galectin-1, Galectin-3, Galectin-3BP/MAC-2BP, HB-EGF, ICAM-2/CD102, IL-1 RII, IL-15 R α , Integrin β 1/CD29, Integrin β 2/CD18, Integrin β 3/CD61, Integrin β 4/CD104, Integrin β 5, Integrin β 6, JAM-A, Lipocalin-2/NGAL, LOX-1/OLR1, MD-1, MMP-2, NCAM-1/CD56, NCAM-L1, Osteopontin (OPN), PAR1, Pref-1/DLK-1/FA1, RECK, Stabilin-1, TACE/ADAM17, Thrombospondin-1, TIMP-1, TIMP-2, TIMP-3, TNF RII/TNFRSF1B			

LUMINEX SCREENING ASSAYS

Human Luminex Screening Assay - Analytes

Adiponectin/Acrp30	Collagen IV $\alpha 1$ •	Glucagon	Leptin
Aggrecan •	Complement Component C5a	GM-CSF	LIF
Amphiregulin •	Complement Factor D/Adipsin	gp130	Lipocalin-2/NGAL
Angiogenin •	C-Reactive Protein/CRP	Growth Hormone	L-Selectin/CD62L
Angiopoietin-1 •	Cripto-1 •	HB-EGF	M-CSF
Angiopoietin-2	CXCL1/GRO α	HGF	MFG-E8 •
Angiopoietin-like 3	CXCL4/PF4	ICAM-1/CD54	MICA •
Angiopoietin-like 4	CXCL5/ENA-78	IFN- γ	MICB •
APP •	CXCL6/GCP-2	IFN- γ R1 •	$\beta 2$ -Microglobulin
B7-H1 •	CXCL8/IL-8	IGFBP-1	MIF
BCMA/TNFRSF17 •	CXCL9/MIG	IGFBP-3	MMP-1
BDNF	CXCL10/IP-10	IL-1 α /IL-1F1	MMP-2
BMP-2 •	CXCL11/I-TAC	IL-1 β /IL-1F2	MMP-3
BMP-4 •	CXCL12/SDF-1 α	IL-1ra/IL-1F3	MMP-7
BMP-9	CXCL13/BLC/BCA-1	IL-1 RI	MMP-8
CA125/MUC16	CXCL16	IL-1 RII	MMP-9
CA15-3	Cystatin C	IL-2	MMP-12
Calbindin D	DcR3 •	IL-3	MMP-13
Cardiac Myoglobin	Dkk-1	IL-4	Myeloperoxidase
Cardiac Troponin I/cTNI	DPPIV/CD26	IL-5	Nephrin •
CCL2/MCP-1	DR3/TNFRSF25 •	IL-6	NRG1- $\beta 1$ /HRG1- $\beta 1$ •
CCL3/MIP-1 α	EGF	IL-6 R α	NT-Pro-ANP •
CCL4/MIP-1 β	EMMPRIN/CD147 •	IL-7	Oncostatin M (OSM)
CCL5/RANTES	Endoglin/CD105	IL-9	Osteopontin (OPN)
CCL7/MCP-3	Endothelin-1	IL-10	PDGF-AA
CCL8/MCP-2	ENPP-2/Autotaxin •	IL-12 p70	PDGF-BB
CCL11/Eotaxin	EphA2 •	IL-13	Pentraxin 3/TSG-14
CCL13/MCP-4	Erythropoietin •	IL-15	Periostin/OSF-2
CCL14/HCC-1/HCC-3 •	E-Selectin/CD62E	IL-17A	PIGF
CCL17/TARC	FABP1/L-FABP •	IL-17E/IL-25	Progranulin •
CCL18/PARC	FABP3/H-FABP •	IL-17F	Prolactin
CCL20/MIP-3 α	FABP4	IL-18 BPa •	Proprotein Convertase 9/PCSK9 •
CCL22/MDC	Fas/TNFRSF6	IL-19 •	P-Selectin/CD62P
CCL24/Eotaxin-2/MPIF-2	Fas Ligand/TNFSF6	IL-22	RAGE
CCL26/Eotaxin-3	α -Fetoprotein	IL-23	RBP4
CCL27/CTACK	FGF acidic	IL-27	Renin
CD14 •	FGF basic	IL-28A/IFN- $\lambda 2$	Resistin
CD25/IL-2 R α	FGF-21	IL-31	ROBO4 •
CD27/TNFRSF7 •	FLRG	IL-33	SCF
CD30/TNFRSF8	Fit-3 Ligand	IL-34 •	Serpin C1/Antithrombin-III
CD40/TNFRSF5 •	Follistatin	IL-36 β /IL-1F8 •	Serpin E1/PAI-1
CD40 Ligand/TNFSF5	Galectin-3	Insulin	SHBG
CD163 •	G-CSF	Insulin C-Peptide	SOST
Chemerin	GDF-15	Kallikrein 3/PSA	SPARC
Chitinase 3-like 1	GDNF	Kallikrein 5 •	SP-D •
Coagulation Factor XIV •			

• Analyte available exclusively from R&D Systems, a Bio-Techne brand

□ New Analyte!

LUMINEX SCREENING ASSAYS

Human Luminex Screening Assay - Analytes

ST2/IL-1 R4 •	TIM-1/KIM-1/HAVCR	TRANCE/RANK L/TNFSF11	VEGF
TACI •	TIMP-1	ULBP-1 •	VEGF-C
Tenascin C •	TNF-α	ULBP-2/5/6 •	VEGF-D
TFF3	TNF RI/TNFRSF1A	ULBP-3 •	VEGF R3/Flt-4
TFPI •	TNF RII/TNFRSF1B	ULBP-4/RAET1E •	Vitamin D Binding Protein
TfR •	Thrombopoietin	uPAR •	vWF-A2 •
Thrombospondin-2 •	TRAIL/TNSF10	Uteroglobin •	
Tie-1 •	TRAIL R2/TNFRSF10B	VAP-1 •	
Tie-2	TRAIL R3/TNFRSF10C •	VCAM-1/CD106	

• Analyte available exclusively from R&D Systems, a Bio-Techne brand New Analyte!

Mouse Luminex Screening Assay - Analytes

Adiponectin/Acrp30	Dkk-1	IL-5	Osteopontin (OPN)
BAFF/BLyS/TNFSF13B	EGF R	IL-6	PDGF-BB
C1q R1/CD93	EMMPRIN/CD147	IL-6 Rα	Periostin/OSF-2
CCL2/JE/MCP-1	Erythropoietin	IL-7	Proprotein Convertase 9/PCSK9
CCL3/MIP-1α	FGF-basic	IL-9	RAGE
CCL4/MIP-1β	FGF-21	IL-10	Resistin
CCL5/RANTES	G-CSF	IL-12 p70	S100A8
CCL11/Eotaxin	GDF-15	IL-13	S100A9
CCL22/MDC	GM-CSF	IL-17A	TIM-1/KIM-1/HAVCR
CCL20/MIP-3α	HGF	IL-23 p19	Thrombospondin-4
C-Reactive Protein/CRP	IFN-γ	IL-33	TNF-α
CXCL1/KC	IGF-I	Lipocalin-2/NGAL	TRANCE/RANK L
CXCL2/MIP-2	IL-1α/IL-1F1	LIX	VEGF
CXCL9/MIG	IL-1β/IL-1F2	M-CSF	VEGF R2/Fik-1
CXCL10/IP-10/CRG-2	IL-2	MMP-9	
CXCL12/SDF-1α	IL-4		

Rat Luminex Screening Assay - Analytes

CXCL2/CINC-3	IL-1α/IL-1F1	IL-10	TNF-α
CXCL3/CINC-2α/β	IL-1β/IL-1F2	IL-13	VEGF
GM-CSF	IL-2	IL-18	
ICAM-1/CD54	IL-4	L-Selectin/CD62L	
IFN-γ	IL-6	TIMP-1	

MULTIANALYTE

LUMINEX PERFORMANCE ASSAYS

Human Adhesion Molecule 4-plex*, **

ICAM-1/CD54
E-Selectin/CD62E
P-Selectin/CD62P
VCAM-1/CD106

Human Angiogenesis Panel

Angiogenin
Angiopoietin-1
Endostatin
FGF acidic
FGF basic
PDGF-AA
PDGF-BB
PIGF
Thrombospondin-2
VEGF
VEGF-D

Human Biomarker Panel A*

BAFF/BlyS/TNFSF13B
CCL20/MIP-3 α
CD14
CD25/IL-2 R α
CD27/TNFRSF7
CXCL13/BLC/BCA-1
gp130
IL-6 R α
TNF RII/TNFRSF1B

Human Cardiac Panel A*

CD40 Ligand/TNFSF5
GDF-15
Pappalysin-1/PAPP-A
Proprotein Convertase 9/PCSK9
ST2/IL-1 R4
TNF RII/TNFRSF1B

Human Cardiac Panel B*

C-Reactive Protein/CRP
Cystatin C
Myeloperoxidase
P-Selectin/CD62P
Serpine E1/PAI-1
TIMP-1

Human Cytokine Panel A

CCL2/MCP-1
CCL3/MIP-1 α
CCL4/MIP-1 β
CCL5/RANTES
CXCL5/ENA-78

CXCL8/IL-8

FGF basic

G-CSF

GM-CSF

IFN- γ

IL-1 α /IL-1F1

IL-1 β /IL-1F2

IL-1ra/IL-1F3

IL-2

IL-4

IL-5

IL-6

IL-10

IL-17

TNF- α

Thrombopoietin

VEGF

Human Cytokine Panel B*

CCL11/Eotaxin
CD40 Ligand/TNFSF5
CXCL10/IP-10
CXCL11/I-TAC
EGF
HGF
IL-12 p70
IL-13
Leptin

Human High Sensitivity Cytokine Panel A

CXCL8/IL-8
GM-CSF
IFN- γ
IL-1 β /IL-1F2
IL-2
IL-4
IL-5
IL-6
IL-10
IL-12 p70
TNF- α
VEGF

Human High Sensitivity Cytokine Panel B***

GM-CSF
IFN- γ
IL-1 β /IL-1F2
IL-2
IL-5
IL-6
IL-7
IL-10
IL-13
IL-15
IL-17A
IL-17F
IL-22
IL-23
IL-31
IL-33
IL-36 β /IL-1F8
TNF- α

Human Kidney Biomarker Panel***

Clusterin
Cystatin C
CXCL10/IP-10
Fetuin A/AHSG
Lipocalin-2/NGAL
Osteopontin (OPN)
RBP4
TFF3
TIM-1/KIM-1/HAVCR

*Analytes in this panel are only available in the polystyrene bead format. **Kit is only available in the premixed format.

***Analytes in this panel are only available in the magnetic bead format.

LUMINEX PERFORMANCE ASSAYS

Human MMP Panel	Human Obesity Panel*	Human TIMP 4-plex**
EMMPRIN/CD147	Adiponectin/Acrp30	TIMP-1
MMP-1	C-Reactive Protein/CRP	TIMP-2
MMP-2	CCL2/MCP-1	TIMP-3
MMP-3	Complement Factor D/Adipsin	TIMP-4
MMP-7	IL-6	
MMP-8	IL-10	
MMP-9	Leptin	
MMP-10	Resistin	
MMP-12	Serpin E1/PAI-1	
MMP-13	TNF- α	
Multi-Species TGF- β 3 Panel*,**		Rat Kidney Toxicity Panel*
TGF- β 1		Cystatin C
TGF- β 2		FABP1/L-FABP
TGF- β 3		Lipocalin-2/NGAL
		Osteopontin (OPN)
		TIM-1/KIM-1/HAVCR

*Analytes in this panel are only available in the polystyrene bead format. **Kit is only available in the premixed format.

***Analytes in this panel are only available in the magnetic bead format.

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- Acetylcholine
- Cannabinoids
- Dopamine
- GABA
- Glutamate
- Opioids
- Voltage-Gated Ion Channels

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- Depression
- Huntington's Disease
- Parkinson's Disease
- Schizophrenia
- Stroke

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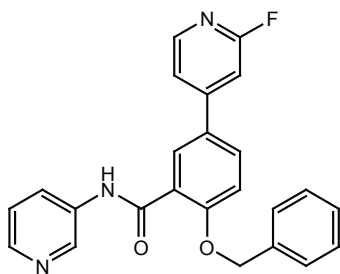
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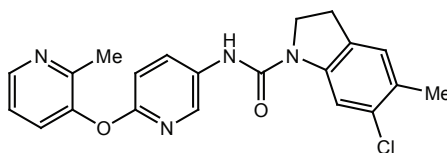
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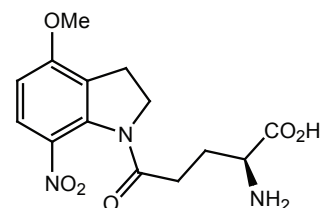
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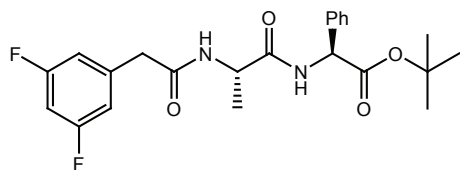
Potent and Selective LRRK2 Inhibitor. GSK2578215A (Tocris, Catalog # 4629) is a potent Leucine-Rich Repeat Ser/Thr Protein Kinase 2 (LRRK2) inhibitor (IC_{50} values are 8.9 and 10.1 nM for LRRK2[G2019S] mutant and wild-type LRRK2 respectively). It displays selectivity for LRRK2 against a panel of 460 other kinases. This compound blocks Ser910 and Ser935 phosphorylation *in vitro* and in peripheral tissues *in vivo*. It is brain penetrant. *Sold for research purposes under agreement from GlaxoSmithKline.*



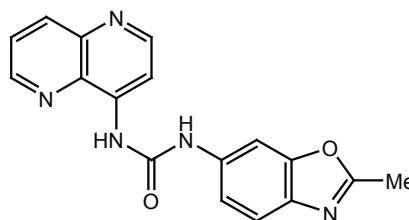
Selective 5-HT_{2C} antagonist. SB 242084 (Tocris, Catalog # 2901) is a selective 5-HT_{2C} antagonist that exhibits >100-fold selectivity for 5-HT_{2C} over other 5-HT receptors. The compound exerts anxiolytic-like activity and is brain penetrant.



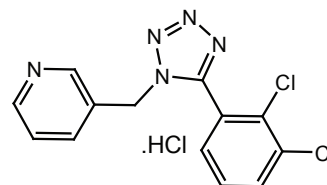
Stable Photoreleaser of L-Glutamate. MNI-caged-L-glutamate (Catalog # 1490) rapidly and efficiently releases glutamate (Catalog # 0218) when photolyzed (300-380 nm excitation). The compound is water-soluble, highly resistant to hydrolysis, stable at a neutral pH, and pharmacologically inactive at neuronal glutamate receptors (up to mM concentrations). It is also 2.5-fold more efficient at releasing L-glutamate than NI-caged L-glutamate. All cited reagents are from Tocris.



Potent γ -Secretase Inhibitor. DAPT (Tocris, Catalog # 2634) is a γ -Secretase inhibitor that reduces A β 40 and A β 42 levels in primary human neurons *in vitro*, as well as in brain extract, cerebral spinal fluid, and plasma *in vivo*. DAPT also inhibits Notch signaling and induces neuronal differentiation in embryonic stem cell-derived embryoid bodies.



Selective OX₁ Receptor Antagonist. SB 334867 (Tocris, Catalog # 1960) is a selective non-peptide Orexin OX₁ Receptor antagonist shown to inhibit intracellular Ca²⁺ release from Chinese hamster ovary (CHO) cells that express OX₁ Receptors ($pK_b = 7.2$). Systemic administration of SB 334867 blocks Orexin A-induced grooming and feeding behavior. *Sold for research purposes under agreement from GlaxoSmithKline.*



Competitive P2X₇ Receptor Antagonist. A 438079 (Tocris, Catalog # 2972) is a competitive P2X₇ Receptor antagonist ($pIC_{50} = 6.9$). It exhibits no activity at other P2 receptors ($IC_{50} > 10 \mu M$) and has been shown to inhibit nociception in animal models of neuropathic pain.

SELECT SMALL MOLECULES AND PEPTIDES

Category	Catalog #	Product Name	Primary Action
5-HT			
5-HT ₁ Receptors	5136	Rizatriptan benzoate	Potent 5-HT _{1B/1D} agonist
5-HT ₁ Receptors	4380	WAY 100635 maleate	Potent 5-HT _{1A} silent antagonist; also D ₄ agonist
5-HT ₂ Receptors	5171	NB0H-2C-CN hydrochloride	Potent and selective 5-HT _{2A} agonist
5-HT ₂ Receptors	4173	MDL 100907	Potent and selective 5-HT _{2A} antagonist
5-HT ₂ Receptors	2901	SB 242084	Selective 5-HT _{2C} antagonist; brain penetrant
5-HT ₃ Receptors	2459	Tropisetron hydrochloride	Potent 5-HT ₃ antagonist; also partial agonist of $\alpha 7$ nAChR
5-HT ₄ Receptors	1658	GR 125487 sulfamate	Potent and selective 5-HT ₄ antagonist; active <i>in vivo</i>
5-HT ₄ Receptors	3499	ML 10302 hydrochloride	Potent and selective 5-HT ₄ partial agonist
5-HT ₆ Receptors	4964	R 1485 dihydrochloride	Selective and high-affinity 5-HT ₆ antagonist
5-HT ₇ Receptors	5005	DR 4485 hydrochloride	Selective and high-affinity 5-HT ₇ antagonist; orally bioavailable
5-HT ₇ Receptors	1612	SB 269970 hydrochloride	Potent and selective 5-HT ₇ antagonist; brain penetrant
Transporters	0927	Fluoxetine hydrochloride	5-HT re-uptake inhibitor
Transporters	1588	Indatraline hydrochloride	Potent 5-HT uptake inhibitor; also inhibits dopamine and noradrenaline uptake

Acetylcholine			
Cholinesterases	4385	Donepezil hydrochloride	Potent AChE inhibitor
Cholinesterases	3727	VU 0255035	Highly selective muscarinic M ₁ antagonist
Muscarinic Receptors	4295	VU 0357017 hydrochloride	Positive allosteric modulator of M ₁ Receptors
Muscarinic Receptors	3383	VU 152100	Positive allosteric modulator of M ₄ Receptors
Muscarinic Receptors	3569	Xanomeline oxalate	Functionally selective M ₁ agonist
Nicotinic Receptors	2133	α -Bungarotoxin	$\alpha 7$ subtype-selective nAChR antagonist
Nicotinic Receptors	2349	Dihydro- β -erythroidine hydrobromide	Antagonist for neuronal $\alpha 4$ -containing Nicotinic Receptors
Nicotinic Receptors	4557	GTS 21 dihydrochloride	Partial agonist at $\alpha 7$ nAChR
Nicotinic Receptors	1029	Methyllycaconitine citrate	$\alpha 7$ neuronal Nicotinic Receptor antagonist
Nicotinic Receptors	3754	Varenicline tartrate	Orally active and subtype-selective $\alpha 4\beta 2$ partial agonist

Adenosine			
A ₁ Receptors	0439	DPCPX	A ₁ selective antagonist
A _{2A} Receptors	1063	CGS 21680 hydrochloride	A _{2A} agonist
A _{2A} Receptors	5147	Istradefylline	Potent and selective adenosine A _{2A} antagonist
A _{2A} Receptors	4783	Lu AA 47070	Prodrug of a potent and selective adenosine A _{2A} antagonist
A ₃ Receptors	1104	2-Cl-IB-MECA	Highly selective A ₃ agonist

Caged Compounds			
AMPA	3840	NPEC-caged-(S)-AMPA	Caged (S)-AMPA
Dopamine	3992	NPEC-caged-dopamine	Caged dopamine
Dopamine	4932	RuBi-Dopa	Caged dopamine; exhibits two-photon sensitivity
GABA	2991	DPNI-caged-GABA	Nitroindoline-caged GABA
GABA	3400	RuBi-GABA	Caged GABA; excitable by visible wavelength
Glutamate	1490	MNI-caged-L-glutamate	Stable photoreleaser of L-glutamate
Nicotine	3855	RuBi-Nicotine	Caged nicotine; rapidly excitable by visible light

Cannabinoids			
CB ₁ Receptors	1117	AM 251	Potent CB ₁ antagonist; also GPR55 agonist
CB ₁ Receptors	4605	(\pm)-SLV 319	Potent and selective CB ₁ antagonist
CB ₂ Receptors	1120	AM 630	CB ₂ selective antagonist/inverse agonist
CB ₂ Receptors	4756	COR 170	Selective CB ₂ inverse agonist
GPR55	1298	2-Arachidonylglycerol	Endogenous cannabinoid ligand; potent GPR55 agonist

SELECT SMALL MOLECULES AND PEPTIDES

Category	Catalog #	Product Name	Primary Action
Dopamine			
D ₁ and D ₅ Receptors	0925	SCH 23390 hydrochloride	Standard selective D ₁ -like antagonist; also 5-HT _{2C} agonist
D ₁ and D ₅ Receptors	1447	SKF 81297 hydrobromide	D ₁ agonist
D ₂ Receptors	1003	L-741,626	High-affinity D ₂ antagonist
D ₂ Receptors	2773	Sumanirole maleate	D ₂ -selective agonist
D ₃ Receptors	4207	SB 277011A dihydrochloride	Selective D ₃ antagonist
D ₄ Receptors	4552	A 412997 dihydrochloride	Selective D ₄ agonist
Non-Selective	0444	Clozapine	Dopamine antagonist with some D ₄ selectivity; also 5-HT _{2A/2C} antagonist
Non-Selective	1061	(-)-Quinpirole hydrochloride	D ₂ -like agonist
Transporters	0421	GBR 12909 dihydrochloride	Selective dopamine uptake inhibitor; also σ ligand

Fluorescent Probes			
Fluorescent Probes	3878	FFN 511	Fluorescent substrate for VMAT2
	4920	Methoxy-X04	Fluorescent amyloid β detector; brain penetrant
	5118	SynaptoRed™ C2	Fluorescent dye; stains synaptic vesicles
	2540	Tocrifluor T1117	Novel fluorescent cannabinoid ligand; fluorescent form of AM 251 (Tocris, Catalog # 1117)

GABA			
GABA _A Receptors	1262	SR 95531 hydrobromide	Selective and competitive GABA _A antagonist
GABA _A Receptors	4414	TP 003	Functionally selective GABA _A ($\alpha 3$ subtype) partial agonist
GABA _B Receptors	1248	CGP 55845 hydrochloride	Potent and selective GABA _B antagonist
GABA _C Receptors	1040	TPMPA	Selective GABA _C antagonist
Transporters	1561	(S)-SNAP 5114	GABA uptake inhibitor

Glutamate			
AMPA Receptors	1045	CNQX disodium salt	Potent AMPA/kainate antagonist; more water soluble form of CNQX (Tocris, Catalog # 0190)
AMPA Receptors	1044	NBQX disodium salt	Potent AMPA antagonist; more water soluble form of NBQX (Tocris, Catalog # 0373)
Carboxypeptidases	5033	2-MPPA	Selective Glutamate Carboxypeptidase II (GCP II) inhibitor; orally bioavailable
Kainate Receptors	0222	Kainic acid	Potent excitant and neurotoxin
Kainate Receptors	2079	UBP 302	Selective and potent GLU _{K5} -subunit containing Kainate Receptor antagonist; active enantiomer of UBP 296 (Tocris, Catalog # 2078)
Metabotropic Receptors	0103	L-AP4	Selective group III mGlu agonist
Metabotropic Receptors	0805	(S)-3,5-DHPG	Selective group I mGlu agonist; active enantiomer of 3,5-DHPG (Tocris, Catalog # 0342)
Metabotropic Receptors	4969	LY 2389575 hydrochloride	Selective negative allosteric modulator of mGlu ₃
Metabotropic Receptors	1209	LY 341495	Highly potent and selective group II mGlu antagonist
Metabotropic Receptors	4976	ML 289	Selective negative allosteric modulator at mGlu ₃
Metabotropic Receptors	1212	MPEP hydrochloride	mGlu ₅ antagonist and positive allosteric modulator at mGlu ₄
Metabotropic Receptors	2921	MTEP hydrochloride	Potent and selective mGlu ₅ antagonist
NMDA Receptors	0106	D-AP5	Potent and selective NMDA antagonist; more active form of DL-AP5 (Tocris, Catalog # 0105)
NMDA Receptors	3693	DL-AP5 sodium salt	Sodium salt of DL-AP5 (Tocris, Catalog # 0105)
NMDA Receptors	1409	CGP 39551	Potent, selective and competitive NMDA antagonist
NMDA Receptors	1594	Ro 25-6981 maleate	Subtype-selective NR2B antagonist
Transporters	5082	LDN 212320	Increases EAAT2 expression; neuroprotective
Transporters	1223	DL-TBOA	Selective non-transportable inhibitor of EAATs

SELECT SMALL MOLECULES AND PEPTIDES

Category	Catalog #	Product Name	Primary Action
Kinases			
DYRK	4997	INDY	Dyrk1A/B inhibitor
GSK-3	3194	BIO	Potent and selective GSK-3 inhibitor
GSK-3	4423	CHIR 99021	Highly selective GSK-3 inhibitor; enhances ESC self-renewal in combination with PD 0325901 (Tocris, Catalog # 4192)
JNK	4924	CEP 1347	Inhibitor of JNK signaling
LRRK	4629	GSK2578215A	Potent and selective LRRK2 inhibitor; brain penetrant
LRRK	4273	LRRK2-IN-1	Potent and selective LRRK2 inhibitor
PAK	5190	FRAX 486	Potent p21-Activated Kinase (PAK) inhibitor; brain penetrant and orally bioavailable
PERK	5107	GSK 2606414	Potent and selective PERK inhibitor; orally bioavailable
Melatonin			
MT ₂ Receptors	1034	4-P-PDOT	MT ₂ antagonist
Non-Selective	0877	Luzindole	Competitive Melatonin MT ₁ /MT ₂ antagonist
Neuronal Metabolism			
A β Peptides	4803	CRANAD 2	Near-infrared probe that detects A β 40 aggregates
A β Peptides	5081	J 147	Neuroprotective and neurotrophic compound; reduces A β 40 and A β 42 levels
FAAH	4175	PF 3845	Selective FAAH inhibitor
MAGL	3836	JZL 184	Monoacylglycerol Lipase (MAGL) inhibitor
Monoamine Oxidase	4308	Rasagiline mesylate	Selective and irreversible MAO-B inhibitor
γ -Secretase	2634	DAPT	γ -Secretase inhibitor; reduces A β 40 and A β 42 levels
γ -Secretase	4898	TC-E 5006	γ -Secretase modulator; reduces A β 42 levels
Neuropeptides			
CGRP Receptors	4314	SB 268262	Selective non-peptide CGRP ₁ antagonist
Neuropeptide S Receptors	5161	ML 154	Potent Neuropeptide S Receptor antagonist
Neuropeptide S Receptors	4510	SHA 68	Selective Neuropeptide S Receptor antagonist
Neuropeptide W/B Receptors	4948	CYM 50769	Novel non-peptide NPBWR1 antagonist
Neuropeptide Y Receptors	2199	CGP 71683 hydrochloride	Highly selective and potent non-peptide NPY Y ₅ Receptor antagonist
Orexin Receptors	4983	ACT 335827	Potent and selective OX ₁ antagonist
Orexin Receptors	4558	EMPA	Highly potent and selective OX ₂ antagonist; brain penetrant
Orexin Receptors	1455	Orexin A (human, rat, mouse)	Endogenous agonist at OX ₁ and OX ₂
Orexin Receptors	1960	SB 334867	Selective non-peptide OX ₁ antagonist
Opioids			
κ Receptors	0347	<i>nor</i> -Binaltorphimine dihydrochloride	Selective κ Opioid Receptor antagonist
μ Receptors	1171	DAMGO	Selective μ Opioid Receptor agonist

Tocriscreen Total (Catalog # 2884)

1120 Biologically Active Compounds Pre-Dissolved in DMSO (250 μ L, 10 mM solutions)

Includes numerous neurotransmitter receptor agonists and antagonists, uptake inhibitors, ion channel blockers and enzyme inhibitors

Learn more | www.tocris.com/ScreeningLibraries



SELECT SMALL MOLECULES AND PEPTIDES

Category	Catalog #	Product Name	Primary Action
Purinergic P2			
P2X Receptors	2972	A 438079 hydrochloride	Competitive P2X ₇ antagonist
P2X Receptors	3323	AZ 10606120 dihydrochloride	Potent P2X ₇ antagonist
P2X Receptors	1391	NF 449	Highly selective P2X ₁ antagonist
P2Y Receptors	3321	AR-C 66096 tetrasodium salt	Potent and selective P2Y ₁₂ antagonist
P2Y Receptors	2157	MRS 2365	Highly potent and selective P2Y ₁ agonist
P2Y Receptors	2159	MRS 2500 tetraammonium salt	Extremely potent and selective P2Y ₁ antagonist
Non-Selective	3209	α,β -Methyleneadenosine 5'-triphosphate trisodium salt	P2 agonist

TRK			
TrkB Receptors	2837	BDNF (human)	Activates TrkB and p75 Receptors
TrkB Receptors	3826	7,8-Dihydroxyflavone	TrkB agonist

TRP Channels			
TRPA Channels	2896	HC 030031	Selective TRPA1 blocker
TRPA Channels	1531	Icilin	Activates a novel cold receptor; cooling agent
TRPC Channels	4912	GsMTx4	TRPC1 and TRPC6 blocker; inhibits mechanosensitive ion channels
TRPC Channels	4732	ML 204	Selective TRPC4 blocker
TRPC Channels	1147	SKF 96365 hydrochloride	TRPC channel blocker; also inhibits store-operated Ca ²⁺ entry
TRPM Channels	4632	TC-I 2000	TRPM8 blocker
TRPM Channels	3040	WS 12	TRPM8 agonist; cooling agent
TRPV Channels	4319	A 784168	Potent and selective TRPV1 antagonist
TRPV Channels	0464	Capsazepine	Vanilloid Receptor antagonist; also activator of ENaC δ
TRPV Channels	5106	GSK 2193874	Potent and selective TRPV4 inhibitor; orally active

Voltage-Gated Ion Channels			
Calcium Channels	1085	ω -Conotoxin GVIA	Ca ²⁺ channel blocker (N-type)
Calcium Channels	2198	Mibefradil dihydrochloride	Ca ²⁺ channel blocker (T-type)
Calcium Channels	3954	<i>trans</i> -Ned 19	NAADP antagonist; inhibits Ca ²⁺ release
Calcium Channels	3775	Pregabalin	Anticonvulsant; selectively binds the $\alpha_2\delta$ subunit of voltage-sensitive calcium channels
Chloride Channels	3430	CFTR _{inh} 172	Voltage-independent, selective CFTR chloride channel blocker
Chloride Channels	4538	T16A _{inh} - A01	Ca ²⁺ -activated Cl ⁻ Channel Transmembrane Protein 16A (TMEM16A) inhibitor
Potassium Channels	1808	E-4031 dihydrochloride	K _v 11.1 (hERG) channel blocker; inhibits rapid delayed rectifier K ⁺ current (I _{Kr})
Potassium Channels	4949	MaxiPost	K ⁺ channel modulator; exerts subtype-specific effects
Potassium Channels	4777	ML 277	Selective K _v 7.1 (KCNQ1) potassium channel activator; augments I _{Ks} current
Potassium Channels	1316	Tertiapin-Q	Selective blocker of inward-rectifier K ⁺ channels
Potassium Channels	4952	TRAM 39	Potent K _{Ca} 3.1 blocker
Sodium Channels	2976	A 803467	Selective Na _v 1.8 blocker
Sodium Channels	5066	ICA 121431	Selective Na _v 1.3 and Na _v 1.1 blocker

NEURAL STEM CELLS

Bio-Techne offers multiple tools to optimize neural stem cell (NSC) experimentation and ensure your stem cell workflow is efficient and reliable.

Complete Workflow Coverage

- We have products for all aspects of NSC experimentation, from culture and expansion to differentiation and verification.

Minimize Experimental Variability

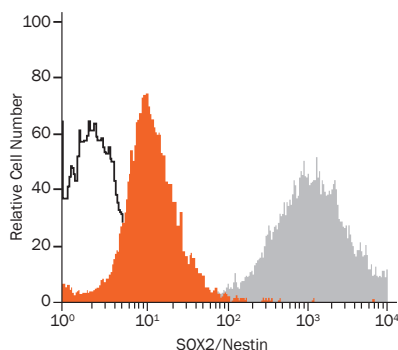
- Our products quickly verify stem cell populations, thereby increasing consistency across experiments.

Save Time and Money

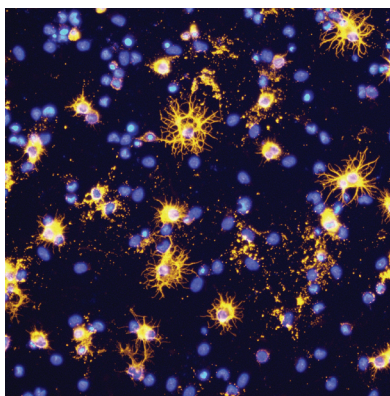
- Our products reduce experimental variability to prevent wasted effort and reagents and allow for more confident data analysis.

Culture and Expansion Products

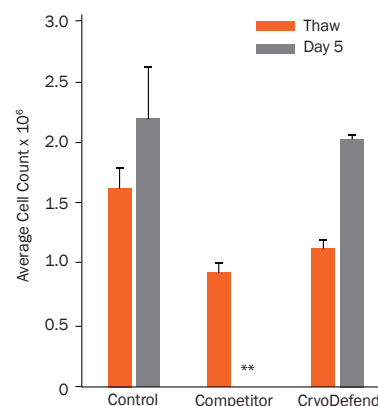
We offer multipotent mouse and rat primary cortical stem cells, as well as a variety of serum-free neural media supplements, growth factors, and small molecules to maintain and expand NSCs.



Mouse Cortical Stem Cells Express Nestin and SOX2. Mouse Cortical Stem Cells (Catalog # NSC002) were stained with a PE-Conjugated Mouse Anti-Mouse/Rat Nestin Monoclonal Antibody (Catalog # IC2736P; gray histogram), a PE-Conjugated Mouse Anti-Human/Mouse SOX2 Monoclonal Antibody (Catalog # IC2018P; orange histogram), or a PE-Conjugated Mouse IgG_{2a} Isotype Control Antibody (Catalog # IC003P; open histogram). All cited reagents are from R&D Systems.



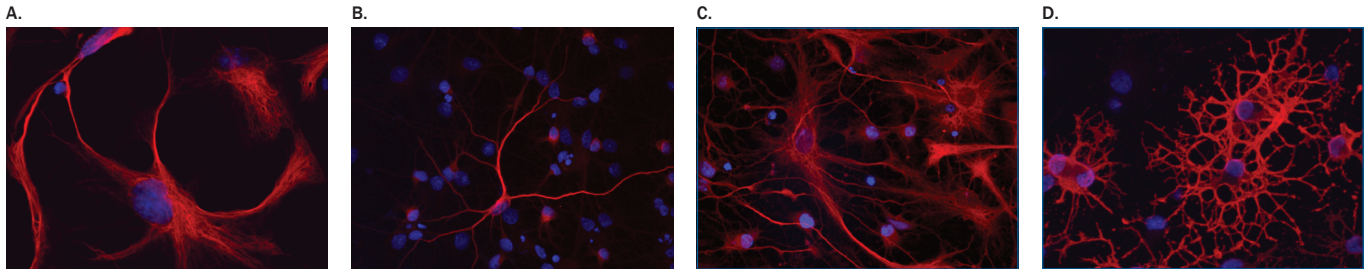
N-2 MAX Media Supplement Provides Optimal Growth Conditions for NSC Expansion. Rat cortical stem cells (Catalog # NSC001) were grown and differentiated for 7 days *in vitro* in media supplemented with N-2 MAX Media Supplement (Catalog # AR009). Differentiated oligodendrocytes were detected using a Mouse Anti-Human/Mouse/Rat/Chicken Oligodendrocyte Marker O4 Monoclonal Antibody (Catalog # MAB1326), followed by the NL557-Conjugated Goat Anti-Mouse IgM Secondary Antibody (Catalog # NL019; yellow). The nuclei were counterstained with DAPI (blue). All cited reagents are from R&D Systems.



Superior Recovery of Rat Neural Progenitor Cells from CryoDefend™-Stem Cells Media Compared to Competitor Cryopreservation Media. Rat Cortical Stem Cells (Catalog # NSC001) were frozen (2 x 10⁶ cells/vial) in control (10% BSA/10% DMSO), competitor, or CryoDefend-Stem Cells media (Catalog # CCM018). Cell viability was assessed at the time of thaw (orange bars) and after 5 days in culture (gray bars) in DMEM/F12 media supplemented with N-2 MAX (Catalog # AR009) and Recombinant Human FGF basic (Catalog # 4114-TC). All cited reagents are from R&D Systems.. ** indicates low recovery yield.

Identification and Verification Kits

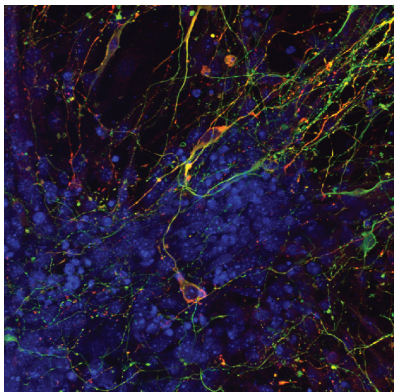
Validating the multipotency of a NSC population prior to its expansion, differentiation, and experimentation will ensure confidence when analyzing the data from downstream experiments. Using suboptimal, unverified NSC populations puts you at risk for inconsistent results, thus wasting time and reagents. We offer a variety of solutions to quickly and confidently assess NSC multipotency.



Functional Verification of Neural Progenitor Cell Multipotency. Rat neural progenitor cells (A) were maintained in culture and differentiated towards neural lineages using the Human/Mouse/Rat Neural Lineage Functional Identification Kit (R&D Systems, Catalog # SC028). NSC differentiation into neurons (B), astrocytes (C), and oligodendrocytes (D) was validated using the cell-specific marker antibodies supplied in the kit. Neural progenitor cells were detected using a Goat Anti-Rat Nestin Antigen Affinity-Purified Polyclonal Antibody, neurons were detected using a Mouse Anti-Neuron-Specific β III Tubulin Monoclonal Antibody, astrocytes were detected using a Sheep Anti-Human GFAP Antigen Affinity-Purified Polyclonal Antibody, and oligodendrocytes were detected using a Mouse Anti-Oligodendrocyte Marker O4 Monoclonal Antibody. The nuclei were counterstained with DAPI (blue).

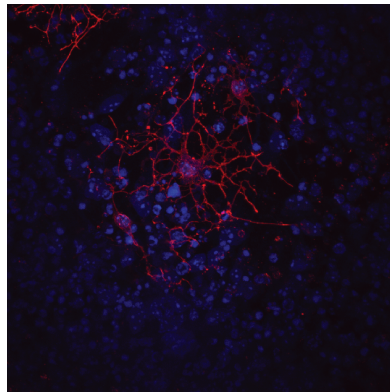
Differentiation Kits

Efficient and consistent NSC differentiation is essential for maximizing research productivity, increasing data reliability, and reducing the cost and labor associated with lengthy differentiation protocols. Our all-in-one kits are specifically designed to efficiently differentiate NSCs into neuronal cell-types. In addition, we offer a wide selection of small molecules to enhance NSC differentiation.



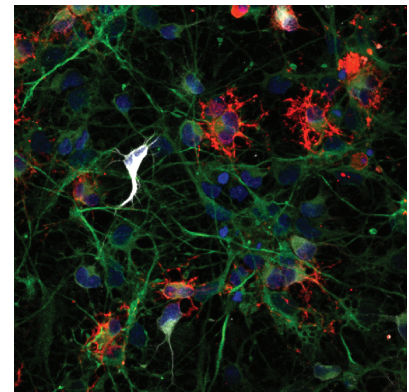
Dopaminergic Neurons Generated from iPS Cells Using the Dopaminergic Neuron Differentiation Kit.

Human induced pluripotent stem (iPS) cells were differentiated into dopaminergic neurons using the Human/Mouse Dopaminergic Neuron Differentiation Kit (Catalog # SC001B). A dopaminergic phenotype was confirmed using a Mouse Anti-Human Tyrosine Hydroxylase Monoclonal Antibody (Catalog # MAB7566) followed by the NL557-Conjugated Donkey Anti-Mouse IgG Secondary Antibody (Catalog # NL007; red). The cells were also stained with a Mouse Anti-Neuron-Specific β III Tubulin (Clone TuJ-1) Monoclonal Antibody (Catalog # MAB1195) followed by the NL493-Conjugated Donkey Anti-Mouse IgG Secondary Antibody (Catalog # NL009; green). The nuclei were counterstained with DAPI (blue). All cited reagents are from R&D Systems.



Mouse Oligodendrocytes Generated Using the Oligodendrocyte Differentiation Kit.

D3 mouse embryonic stem cells were expanded in KO-ES media and differentiated into oligodendrocytes using the Mouse Oligodendrocyte Differentiation Kit (Catalog # SC004). An oligodendrocyte phenotype was detected using a Mouse Anti-Human/Mouse/Rat/Chicken Oligodendrocyte Marker O4 Monoclonal Antibody (Catalog # MAB1326) followed by staining with the NL557-Conjugated Goat Anti-Mouse IgM Secondary Antibody (Catalog # NL019; red). The nuclei were counterstained with DAPI (blue). All cited reagents are from R&D Systems.



β III Tubulin, GFAP, and Oligodendrocyte Marker O4 in Differentiated Rat Cortical Stem Cells.

Rat cortical stem cells (Catalog # NSC001) were differentiated into neurons, astrocytes, and oligodendrocytes using the Human/Mouse/Rat Neural Lineage Functional Identification Kit (Catalog # SC028). Differentiated cells were stained with cell-specific antibodies from the Human/Mouse/Rat Neural 3-Color Immunocytochemistry Kit (Catalog # SC024). Neurons were stained with a NL637-Conjugated Mouse Anti-Neuron-Specific β III Tubulin Monoclonal Antibody (Clone TuJ-1; white), astrocytes were stained with a NL493-Conjugated Sheep Anti-GFAP Antigen Affinity-Purified Polyclonal Antibody (green), and oligodendrocytes were stained with a NL557-Conjugated Mouse Anti-Oligodendrocyte Marker O4 Monoclonal Antibody (red). The nuclei were counterstained with DAPI (blue). All cited reagents are from R&D Systems.

NEURAL STEM CELLS

Cortical Stem Cells and Cryopreservation Medium

Product	Catalog #	Description
Rat Primary Cortical Stem Cells	NSC001	Isolated from E14.5 Sprague-Dawley rats; 3 x 10 ⁶ cells/vial
Mouse Primary Cortical Stem Cells	NSC002	Isolated from E14.5 CD-1 mice; 2 x 10 ⁶ cells/vial
CryoDefend™-Stem Cells	CCM018	Media for protein-free cryopreservation of stem cells

Cell Culture Supplements and Substrates

Product	Catalog #	Description
N-2 Plus Media Supplement	AR003	Chemically defined, serum-free media for culturing neural progenitor cells and their differentiated derivatives; contains bovine Insulin
N-2 MAX Media Supplement	AR009	Chemically defined, serum-free media for culturing neural progenitor cells and their differentiated derivatives; contains recombinant human Insulin
N21-MAX Media Supplement	AR008	Serum-free, defined media for the long-term culture of neurons in the absence of an astrocyte feeder layer
Holo-Transferrin	2914-HT-001	Facilitates iron transport and improves cell proliferation in culture
StemXVivo™ Culture Matrix	CCM013	A defined matrix for the growth and differentiation of stem cells and progenitor cells
Human Fibronectin, CF	1918-FN-02M	Carrier Free, plasma-derived protein that facilitates NSC adherence to culture dishes and promotes NSC expansion <i>in vitro</i> ; does not contain BSA
Mouse Fibronectin, CF	1030-FN	Carrier Free, plasma-derived protein that facilitates NSC adherence to culture dishes and promotes NSC expansion <i>in vitro</i> ; does not contain BSA
Recombinant Human Fibronectin Full, CF	4305-FN-200	Carrier Free, NS0 murine myeloma cell line-derived protein that facilitates NSC adherence to culture dishes and promotes NSC expansion <i>in vitro</i> ; does not contain BSA
Recombinant Human Fibronectin Fragment 2	3225-FN-100	Carrier Free, NS0 murine myeloma cell line-derived protein that facilitates NSC adherence to culture dishes and promotes NSC expansion <i>in vitro</i> ; does not contain BSA
Recombinant Human Fibronectin Fragment 3	3938-FN-050	Carrier Free, NS0 murine myeloma cell line-derived protein that facilitates NSC adherence to culture dishes and promotes NSC expansion <i>in vitro</i> ; does not contain BSA
Recombinant Human Fibronectin Fragment 4	3624-FN-050	Carrier Free, NS0 murine myeloma cell line-derived protein that facilitates NSC adherence to culture dishes and promotes NSC expansion <i>in vitro</i> ; does not contain BSA
Recombinant Human Fibronectin, ACFP	ACFP4305	Animal Component-Free Process (ACFP) Fibronectin, derived from the <i>baculovirus Spodoptera frugiperda</i> , Sf 9; facilitates NSC adherence to culture dishes and promotes NSC expansion <i>in vitro</i>
Cultrex® Poly-L-Lysine	3438-100-01	A highly positively charged amino acid chain; used as a coating agent to promote cell adhesion in culture

NSC Kits

Product	Catalog #	Description	Species
Neural Lineage Functional Identification Kit	SC028	Verify multipotency of human, mouse, and rat neural progenitor cells (NPCs) by functional differentiation	Human, Mouse, Rat
Neural 3-Color Immunocytochemistry Kit	SC024	Characterize human, mouse, and rat neural cells differentiated from NPCs	Human, Mouse, Rat
Neural Progenitor Cell Marker Antibody Panel	SC025	Contains a collection of neural progenitor markers to verify multipotency	Human, Mouse, Rat
Dopaminergic Neuron Differentiation Kit	SC001B	Differentiates human and mouse ES/iPS cells into dopaminergic neurons under serum-free conditions	Human, Mouse
Oligodendrocyte Differentiation Kit	SC004	Differentiates mouse ES/iPS cells into oligodendrocytes under serum-free conditions	Mouse

NEURAL STEM CELLS

Proteins for NSC Research

Molecule	Catalog #	Species	Source
BDNF	248-BD	Human, Mouse, Rat, Canine, Equine	<i>Sf</i> 21
BMP-2	355-BM	Human	CHO
BMP-4	314-BP	Human	NSO
BMP-4	5020-BP	Mouse	CHO
CNTF	257-NT	Human	<i>E. coli</i>
CNTF	557-NT	Rat	<i>E. coli</i>
EGF	236-EG	Human	<i>E. coli</i>
EGF	2028-EG	Mouse	<i>E. coli</i>
EGF	3214-EG	Rat	<i>E. coli</i>
FGF basic	3139-FB	Mouse	<i>E. coli</i>
FGF basic	3339-FB	Rat	<i>E. coli</i>
FGF basic	233-FB	Human	<i>E. coli</i>
FGF-10	345-FG	Human	<i>E. coli</i>
FGF-10	6224-FG	Mouse	<i>E. coli</i>
FGF-10	7804-FG	Rat	<i>E. coli</i>
FGF-8b	423-F8	Human, Mouse	<i>E. coli</i>
GDNF	212-GD	Human	NSO
GDNF	512-GF	Rat	<i>Sf</i> 21
IGF-I	291-G1	Human	<i>E. coli</i>
IGF-I	791-MG	Mouse	<i>E. coli</i>
IGF-I	4326-RG	Rat	<i>E. coli</i>
β-NGF	256-GF	Human	NSO
β-NGF	1156-NG	Mouse	NSO
β-NGF	556-NG	Rat	<i>Sf</i> 21
NT-3	267-N3	Human	<i>Sf</i> 21
NT-4	268-N4	Human	<i>Sf</i> 21
NT-4	3236-N4	Mouse	NSO
PDGF	120-HD	Human	Human Platelets
PDGF-AA	221-AA	Human	<i>E. coli</i>
PDGF-AA	1055-AA	Rat	<i>E. coli</i>
PDGF-AB	222-AB	Human	<i>E. coli</i>
PDGF-AB	1115-AB	Rat	<i>E. coli</i>
PDGF-BB	220-BB	Human	<i>E. coli</i>
PDGF-BB	520-BB	Rat	<i>E. coli</i>
Sonic Hedgehog/Shh (C24II) N-Terminus	1845-SH	Human	<i>E. coli</i>
Sonic Hedgehog/Shh (C25II) N-Terminus	464-SH	Mouse	<i>E. coli</i>
VEGF 164	493-MV	Mouse	<i>Sf</i> 21
VEGF 164	564-RV	Rat	NSO
VEGF 165	293-VE	Human	<i>Sf</i> 21

Source Key: CHO (Chinese hamster ovary cell line), NSO (Mouse myeloma cell line), *Sf* (*Spodoptera frugiperda*)

NEURAL STEM CELLS

Small Molecules for NSC Expansion

Product	Catalog #	Primary Action
17-AAG	1515	Selective HSP90 inhibitor; protects neural progenitors from naturally occurring apoptosis
Amiodarone hydrochloride	4095	Ion channel blocker; selectively inhibits NSC proliferation in hESC-derived cell populations
CHIR 99021	4423	Selective GSK-3 inhibitor; enhances ESC self-renewal in combination with PD 0325901 (Tocris, Catalog # 4192)
Cyclopamine	1623	Hedgehog signaling inhibitor; suppresses the proliferation of Ptch1 ^{+/−} medulloblastoma precursor cells
DMH-1	4126	Selective ALK2 Receptor inhibitor; promotes iPSC neurogenesis in combination with SB 431542 (Tocris, Catalog # 1614)
INDY	4997	Dyrk1A/B inhibitor; impairs the self-renewal capacity of NSCs
P7C3	4076	Neuroprotective and proneurogenic compound; orally available
SB 431542	1614	Induces proliferation, differentiation and sheet formation of ESC-derived endothelial cells
SU 5402	3300	Potent FGF R and VEGF R inhibitor; attenuates Integrin β4-mediated differentiation of neural stem cells
Y-27632 dihydrochloride	1254	Selective p160ROCK inhibitor; enhances survival of hES cells undergoing cryopreservation

Small Molecules for NSC Differentiation

Product	Catalog #	Primary Action
DAPT	2634	γ-Secretase inhibitor; induces neuronal differentiation of neural cells
Fluoxetine hydrochloride	0927	5-HT re-uptake inhibitor; induces differentiation of neuronal precursors
Forskolin	1099	Adenylyl Cyclase activator; induces neuronal differentiation in NSCs
ISX 9	4439	Induces neuronal differentiation of SVZ progenitors
KHS 101 hydrochloride	4888	Selective inducer of neuronal differentiation in hippocampal neural progenitors
Metformin hydrochloride	2864	Antidiabetic agent; promotes neurogenesis
Neurodazine	3656	Induces neurogenesis in mature skeletal muscle cells
Neuropathiazol	5186	Selective inducer of neuronal differentiation in hippocampal neural progenitors
1-Oleoyl lysophosphatidic acid sodium salt	3854	Endogenous agonist of LPA ₁ and LPA ₂ ; inhibits differentiation of NSCs into neurons
O-Phospho-L-serine	0238	Group III mGlu agonist; inhibits proliferation and enhances neuronal differentiation of progenitor cells
Retinoic acid	0695	Retinoic Acid Receptor agonist; promotes differentiation of ESCs into neurons, glia and adipocytes
TCS 2210	3877	Inducer of neuronal differentiation in MSCs
TWS 119	3835	GSK-3β inhibitor; induces neuronal differentiation in ESCs
Valproic acid, sodium salt	2815	Histone Deacetylase inhibitor; promotes neuronal differentiation

Antibodies to Investigate Synapse Development

Molecule	Catalog #	Brand	Species	Clonality	Applications	Conjugates
CaMKIIα	NB100-1983	Novus Biologicals	Human, Mouse, Rat +	Mono	WB, ICC, IHC, ELISA, IP, RI	Yes
EAAT1/GLAST-1	AF6048	R&D Systems	Human	Poly	WB, IHC	No
HOMER	NBP1-44999	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC	No
Neuroigin 1	AF4340	R&D Systems	Human, Rat	Poly	WB, IHC	Yes
NMDA Receptor 2B	NB300-106	Novus Biologicals	Human, Mouse, Rat	Poly	WB, ICC, IHC, FC, IP	No
PSD-95	NB300-556	Novus Biologicals	Human, Mouse, Rat +	Mono	WB, ICC, IHC, FC, ChIP, IP, B/N	Yes
Synapsin I	NB300-104	Novus Biologicals	Human, Mouse, Rat	Poly	WB, ICC, IHC, IP	No
Synaptophysin	NB300-653	Novus Biologicals	Human, Mouse, Rat +	Poly	WB, ICC, IHC, IP	No
Synaptotagmin-1	MAB43641	R&D Systems	Rat	Mono	WB, IHC, IP	No
Synuclein-α	NBP1-26380	Novus Biologicals	Human, Mouse	Mono	WB, IHC, FC	Yes

Species Key: + Additional Species Available **Applications Key:** B/N (Blocking/Neutralization), ChIP (Chromatin Immunoprecipitation), ELISA (ELISA Capture and/or Detection), FC (Flow Cytometry), ICC (Immunocytochemistry), IHC (Immunohistochemistry), IP (Immunoprecipitation), RI (Radioimmunoassay), and WB (Western blot)

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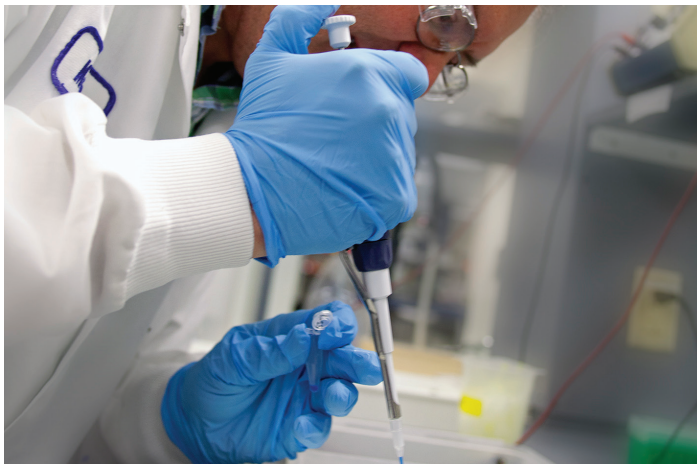
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- Conversion of a traditional hybridoma to recombinant antibody.
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