

Neuronal and Glial Cell Marker Atlas

Cell Type Markers

*Proliferating Cells

Neural Stem Cell Markers

- Musashi
- Notch1
- SSEA1

Neuroepithelial Cells*

- E-Cadherin
- HES1
- Nestin
- Notch1
- Sox2
- Sox10

Schwann Cells

- EAAT1 (GLAST-1)
- EAAT2 (GLT-1)
- GAP43
- GFAP
- Myelin Basic Protein
- NCAM
- p75NTR
- S100B

Radial Glia*

- BLP (FABP7)
- N-Cadherin
- GFAP
- EAAT1 (GLAST-1)
- Nestin
- Sox2
- Tenascin C
- Vimentin

Microglia



- ASC
- CD11b (ITGAM)
- CD40
- CD45
- CD68
- F4/80
- Iba1
- PU.1
- TMEM119

Homeostatic:

- C1qA/B
- CX3CR1
- Cystatin 3 (CST3)
- P2RY12

Functional Markers:

- Arg3.1 (Arc)
- CaMKII
- CREB
- EGR1
- Erk
- c-Fos
- PKA

Proliferating Cell Markers:

- BrdU
- Ki-67
- PCNA

Oligodendrocytes

- A2B5
- CNPase
- MAG
- MOG
- Myelin Basic Protein
- NG2
- Olig2
- SOX10

Astrocytes

- A2B5
- ALDH1L1
- EAAT1 (GLAST-1)
- EAAT2 (GLT-1)
- GFAP
- Notch
- S100B

Intermediate Progenitors*

- EOMES (Tbr2)
- Neurogenin 2
- Pax6

Immature Neurons

- Doublecortin
- NeuroD1
- TBR1
- β 3-Tubulin

Mature Neurons

- MAP2
- NeuN
- Neurofilament-H
- Neurofilament-L
- Neurofilament-M
- Neuron Specific Enolase (NSE)
- Tau
- Thy1
- β 3-Tubulin
- UCHL1

Neurotransmitters

Neuronal Subtypes

Glutamatergic Neurons

- VGLUT1/2

GABAergic Neurons

- ADORA2A
- DARPP-32
- GAD1/2
- Neuropeptide Y
- Penk

Dopaminergic Neurons

- ALDH1A1
- FoxA2
- GIRK2
- Lmx1B
- Tyrosine Hydroxylase

Serotonergic Neurons

- FEV
- SERT
- TPH2
- Tryptophan Hydroxylase

Cholinergic Neurons

- ChAT

Interneurons

- Calbindin
- Calretinin
- 5-HT3A Receptor
- Parvalbumin
- Somatostatin
- VIP

Motor Neurons

- ChAT
- HB9
- Islet-1/2
- Neurogenin 2
- Olig2

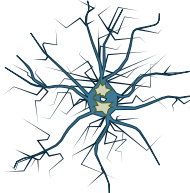
Neurodegenerative Disease-Associated Markers

Alzheimer's Disease



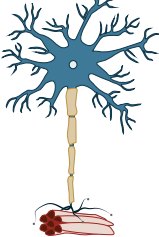
- β -Amyloid (A β)
- ApoE
- CD33
- Presenilin 1/2 (PSEN1/2)
- Tau
- TREM2

Parkinson's Disease



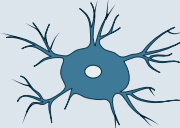
- DJ-1
- GBA
- LRRK2
- Parkin
- PINK1
- α -Synuclein
- UCHL1
- VPS35

ALS



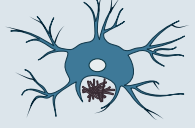
- C9orf72
- FUS
- SOD1
- SQSTM1
- TDP43

Disease-Associated Microglia (DAM)



- Stage 1
- Upregulated
 - ApoE
 - DAP12 (TYROBP)
 - TREM2

- Downregulated
- P2RY12
 - CX3CR1
 - TMEM119
 - CD33



- Stage 2 (TREM2-Dependent)
- Axl
 - Cystatin F (CST7)
 - Dectin-1 (CLEC7a)
 - CD11c (ITGAX)
 - Spp1

Key Products for Neuronal and Glial Cell Markers

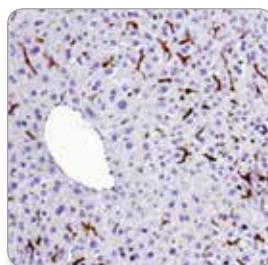
Visit www.cellsignal.com for a full listing of antibodies, related kits, and reagents.

ANTIBODIES & KITS

	APPLICATIONS	REACTIVITY
#14974 β -Amyloid (1-42 Specific) (D9A3A) Rabbit mAb	WB, IF-F	H, (M, R)
#15126 β -Amyloid (D3D2N) Mouse mAb	WB, IHC-P, IF-F	H
#8243 β -Amyloid (D54D2) XP [®] Rabbit mAb	WB, IP, IF-P	H
#13366 ApoE (pan) (D7I9N) Rabbit mAb	WB, IP, IHC-P	H
#13176 Calbindin (D114Q) XP [®] Rabbit mAb	WB, IP, IHC-P, IF-F	H, M, R
#40868 CD40 (D8W3N) Rabbit mAb	WB, IHC-P	H
#13917 CD45 (D9M8I) XP [®] Rabbit mAb	WB, IP, IHC-P, IF-IC, F	H
#76437 CD68 (D4B9C) XP [®] Rabbit mAb	IHC-P, IF-IC, F	H
#5664 CNPase (D83E10) XP [®] Rabbit mAb	WB, IP, IF-F	H, M, R
#9197 CREB (48H2) Rabbit mAb	WB, IP, IHC-P, IHC-F, IF-F, IF-IC, F, ChIP, ChIP-seq	H, M, R, Mk, Dm
#2306 DARPP-32 (19A3) Rabbit mAb	WB, IP, IHC-P, IF-F	M, R, (H)
#14802 Doublecortin (A8L1U) Rabbit mAb	IF-F	M
#3195 E-Cadherin (24E10) Rabbit mAb	WB, IHC-P, IHC-F, IF-IC, F	H, M, (B, Dg, Pg)
#14472 E-Cadherin (4A2) Mouse mAb	WB, IP, IHC-P, IF-IC, F	H, M, R
#5684 EAAT1 (D44E2) XP [®] Rabbit mAb	WB, IP, IF-F	H, M, R
#3838 EAAT2 Antibody	WB, IF-F	M, R, (H)
#70076 F4/80 (D2S9R) XP [®] Rabbit mAb	WB, IP, IHC-P	M
#8186 FoxA2/HNF3 β (D56D6) XP [®] Rabbit mAb	WB, IP, IF-IC	H, M, R
#8945 GAP43 (D9C8) Rabbit mAb	WB, IP, IF-F	H, M, R
#12389 GFAP (D1F4Q) XP [®] Rabbit mAb	WB, IF-F	H, M, R
#3670 GFAP (GA5) Mouse mAb	WB, IHC-P, IF-F, IF-IC	H, M, R
#49420 ITGAM/CD11B (D6X1N) Rabbit mAb	WB, IHC-P	H
#9449 Ki-67 (8D5) Mouse mAb	IHC-P, IF-IC, F	H
#9129 Ki-67 (D3B5) Rabbit mAb	IF-F, IF-IC, F	H, M, R
#9043 MAG (D4G3) XP [®] Rabbit mAb	WB, IP, IF-F	H, M, R
#8707 MAP2 (D5G1) XP [®] Rabbit mAb	WB, IP, IF-F	M, R, (H)
#78896 Myelin Basic Protein (D8X4Q) XP [®] Rabbit mAb	WB, IHC-P, IF-F, IF-IC	H, M, R
#14215 N-Cadherin (13A9) Mouse mAb	WB, IP, IF-IC	H, M, R, Mk
#13116 N-Cadherin (D4R1H) XP [®] Rabbit mAb	WB, IP, IHC-P, IF-IC	H, M
#3576 NCAM (CD56) (123C3) Mouse mAb	WB, IHC-P, IF-IC, F	H
#4760 Nestin (Rat-401) Mouse mAb	IHC-P, IF-F	R
#24307 NeuN (D4G40) XP [®] Rabbit mAb	WB, IHC-P, IF-F	H, M, R
#2836 Neurofilament-H (RMdO 20) Mouse mAb	WB, IHC-P, IF-F	H, M, R
#2837 Neurofilament-L (C28E10) Rabbit mAb	WB, IHC-P, IF-F	H, M, R
#2835 Neurofilament-L (DA2) Mouse mAb	WB, IHC-P, IF-F	H, M, R
#2838 Neurofilament-M (RMO 14.9) Mouse mAb	WB, IP, IHC-P, IF-F	H, M, R
#11976 Neuropeptide Y (D7Y5A) XP [®] Rabbit mAb	WB, IHC-P, IF-F, IF-IC	H, M, R
#3608 Notch1 (D1E11) XP [®] Rabbit mAb	WB, IP, IHC-P, ChIP	H, M, R
#8238 p75NTR (D4B3) XP [®] Rabbit mAb	WB, IP, IF-IC	H, M, R
#13110 PCNA (D3H8P) XP [®] Rabbit mAb	WB, IP, IHC-P, IF-F, IF-IC, F	H, M, R, Mk
#36233 PSD95 (7E3) Mouse mAb	WB, IF-F, IF-IC	H, M, R
#3450 PSD95 (D27E11) XP [®] Rabbit mAb	WB, IF-F	H, M, R
#89356 Sox10 (D5V9L) Rabbit mAb	WB, IP, IF-IC	H

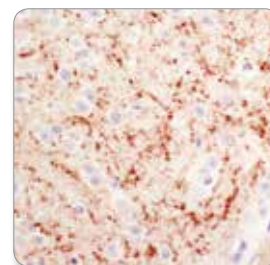
ANTIBODIES & KITS

	APPLICATIONS	REACTIVITY
#3579 Sox2 (D6D9) XP [®] Rabbit mAb	WB, IF-IC, F	H, (B, Dg, Hr)
#4900 Sox2 (L1D6A2) Mouse mAb	WB, IF-IC, F	H, M, (R, B, Dg, Hr)
#5297 Synapsin-1 (D12G5) XP [®] Rabbit mAb	WB, IP, IHC-P, IF-F	H, M, R
#4179 α -Synuclein (D37A6) XP [®] Rabbit mAb	WB, IP, IHC-P, IF-F	M, R
#5568 β -Tubulin (D71G9) XP [®] Rabbit mAb	WB, IP, IF-F, IF-IC	H, M, R
#4466 β -Tubulin (TU-20) Mouse mAb	WB, IHC-P, IF-F	H, M, R
#46687 Tau (D1M9X) XP [®] Rabbit mAb	WB, IHC-P, IF-F, IF-IC	H, M, R
#12885 Phospho-Tau (Thr181) (D9F4G) Rabbit mAb	WB, IP, IHC-P	H, M, R
#3448 TDP43 (G400) Antibody	WB, IP, IF-IC	H, M, R
#91068 TREM2 (D8I4C) Rabbit mAb	WB, IP, IF-IC	H
#13106 Tyrosine Hydroxylase (A8Y7R) Rabbit mAb	WB, IF-F, IF-IC	H, M, R
#13179 UCHL1 (D3T2E) XP [®] Rabbit mAb	WB, IHC-P, IF-IC, F	H, M, R, Mk, (Hm, B, Dg, Pg, Hr)
#5741 Vimentin (D21H3) XP [®] Rabbit mAb	WB, IHC-P, IF-IC, F	H, M, R, Mk



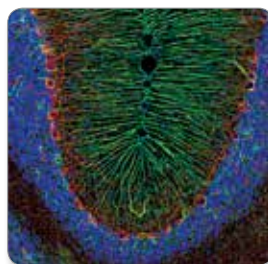
F4/80 (D2S9R) XP[®] Rabbit mAb

#70076: IHC analysis of paraffin-embedded mouse liver using #70076.



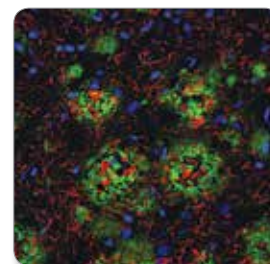
α -Synuclein (D37A6) XP[®] Rabbit mAb

#4179: IHC analysis of paraffin-embedded mouse brain using #4179.



GFAP (D1F4Q) XP[®] Rabbit mAb

#12389: Confocal IF analysis of rat cerebellum using #12389 (green) and Neurofilament-H (RMdO 20) Mouse mAb #2836 (red). Blue pseudocolor = DRAQ5[®] #4084 (fluorescent DNA dye).



β -Amyloid (D54D2) XP[®] Rabbit mAb

#8243: Confocal IF analysis of paraffin-embedded human Alzheimer's brain using #8243 (green) and Tau (Tau46) Mouse mAb #4019 (red). Blue pseudocolor = DRAQ5[®] #4084 (fluorescent DNA dye).

APPLICATIONS & REACTIVITY KEY: **WB** Western Blotting / **IP** Immunoprecipitation / **IHC** Immunohistochemistry / **IF** Immunofluorescence / **F** Flow Cytometry / **ChIP** Chromatin Immunoprecipitation / **-IC** Immunocytochemistry / **-P** Paraffin / **-F** Frozen / **E-P** Peptide ELISA / **H** human / **M** mouse / **R** rat / **Hm** hamster / **Mk** monkey / **C** chicken / **Mi** mink / **Dm** D. melanogaster / **X** Xenopus / **Z** zebrafish / **B** bovine / **Dg** dog / **Pg** pig / **Sc** S. cerevisiae / **All** all species expected / **()** 100% sequence homology

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For pathway key and background please visit:

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