



Nerve Cell Markers

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Cholinergic neurons

Kit			
Target	Code	Species	Sample types
AChE	CSB-E17001Fh	Fish	serum, plasma, tissue homogenates
ACHE	CSB-E09670h	Human	serum, plasma, tissue homogenates
AChE	CSB-E17521m	Mouse	serum, plasma, cell culture supernates, tissue homogenates
ACHE	CSB-E11304r	Rat	serum, plasma, tissue homogenates
CHAT	CSB-E17524m	Mouse	serum, plasma, tissue homogenates, cell culture supernates
CHAT	CSB-E17523r	Rat	serum, plasma, cell culture supernates, tissue homogenates

Antibody			
Target	Code	Species Reactivity	Application
ACHE	CSB-PA5619A0Rb	Human	ELISA, IHC, IF
CHAT	CSB-PA005314LA01HU	Human, Mouse	ELISA, WB, IHC, IF

Protein			
Target	Code	Species	Source
ACHE	CSB-EP001154BO	Bovine	E.coli

A cholinergic neuron is a nerve cell which mainly uses the neurotransmitter acetylcholine (ACh) to send its messages. Many neurological systems are cholinergic. Cholinergic neurons provide the primary source of acetylcholine to the cerebral cortex, and promote cortical activation during both wakefulness and rapid eye movement sleep.

Dopaminergic neurons

Kit			
Target	Code	Species	Sample types
DBH	CSB-E09653h	Human	serum, plasma, tissue homogenates
NR4A2	CSB-EL016063HU	Human	serum, plasma, tissue homogenates, cell lysates
TH	CSB-E09661h	Human	serum, plasma, tissue homogenates
TH	CSB-E17645m	Mouse	serum, plasma, tissue homogenates, cell culture supernates
TH	CSB-E13102r	Rat	serum, tissue homogenates

Dopaminergic neurons are a type of cells that synthesize the neurotransmitter dopamine. The experimental data showed that the contents of brain were different in lactating animals. The contents of caudate nucleus and putamen nucleus were the highest, followed by substantia nigra and globus pallidus.

Antibody			
Target	Code	Species Reactivity	Application
SLC6A3	CSB-PA021701LA01HU	Human, Mouse	ELISA, WB, IF
TH	CSB-PA023470LA01HU	Human, Mouse, Rat	ELISA, WB, IHC
TOR1A	CSB-PA024067LA01HU	Human	ELISA, IHC, IF

Protein			
Target	Code	Species	Source
DBH	CSB-EP006518HU	Human	E.coli
DBH	CSB-YP006518HU	Human	Yeast
NR4A2	CSB-YP016063HU	Human	Yeast
PRKN	CSB-EP017451HU	Human	E.coli
PRKN	CSB-BP017451HU	Human	Baculovirus

GABAergic neurons

Kit			
Target	Code	Species	Sample types
GAD1	CSB-E09199h	Human	serum, plasma, tissue homogenates
GAD1	CSB-EL009159MO	Mouse	serum, plasma, tissue homogenates, cell lysates
GAD2	CSB-E14119h	Human	serum, plasma, tissue homogenates

Protein			
Target	Code	Species	Source
ABAT	CSB-EP001032HU	Human	E.coli
Gad2	CSB-EP009160MO	Mouse	E.coli
PPP1R1B	CSB-EP880070HU	Human	E.coli

Antibody			
Target	Code	Species Reactivity	Application
ABAT	CSB-PA001032ESR1HU	Human	ELISA, IHC
GABBR2	CSB-PA009135ESR1HU	Human	ELISA
GAD1	CSB-PA858702ESR2HU	Human	ELISA, IHC
GAD2	CSB-PA11159A0Rb	Human, Mouse	ELISA, WB, IHC
PPP1R1B	CSB-PA880070DSR1HU	Human	ELISA, IHC
SLC32A1	CSB-PA863984LA01HU	Human	ELISA, IHC, IF
SLC6A13	CSB-PA889104LA01HU	Human	ELISA, IHC, IF

GABA neurons refer to the portion of nerve cells that mainly utilize GABA as neurotransmitter in the central nervous system. GABA is one of two neuroinhibitors in the central nervous system (CNS) and has a homologous function to ACh, gating anion channels that allow Cl⁻ ions to enter the post synaptic neuron.

Glutamatergic neurons

Kit			
Target	Code	Species	Sample types
FOLH1	CSB-EL008782HU	Human	serum, plasma, tissue homogenates
GOT1	CSB-E09603h	Human	serum, plasma, tissue homogenates
GOT1	CSB-E13023r	Rat	serum, plasma
GRIN1	CSB-EL009911HU	Human	serum, plasma, tissue homogenates, cell lysates
GRIN2B	CSB-EL009913MO	Mouse	serum, plasma, tissue homogenates, cell lysates

Glutamatergic neurons—glutamate. Glutamate is one of two primary excitatory amino acid neurotransmitter, the other being Aspartate. Glutamate receptors are one of four categories, three of which are ligand-gated ion channels and one of which is a G-protein coupled receptor (often referred to as GPCR).

Antibody			
Target	Code	Species Reactivity	Application
FOLH1	CSB-PA11729A0Rb	Human	ELISA, WB, IHC
GLS	CSB-PA009528DA01HU	Human, Mouse	ELISA, WB, IHC
GOT1	CSB-PA009679HA01HU	Human, Mouse	ELISA, WB, IHC, IF
GRIN1	CSB-PA009911LA01HU	Human	ELISA, IF
GRIN2B	CSB-PA615671DSR2HU	Human	ELISA, IHC
SLC1A6	CSB-PA021437LA01HU	Human, Mouse	ELISA, WB, IF

Protein			
Target	Code	Species	Source
GLS	CSB-EP009528HU(F1)	Human	E.coli
GLS	CSB-EP009528HU(F)	Human	E.coli
GRIN1	CSB-EP009911HU	Human	E.coli
SLC1A1	CSB-EP021432HU	Human	E.coli
SLC1A6	CSB-EP021437HU	Human	E.coli

Serotonergic neurons

Kit			
Target	Code	Species	Sample types
TPH2	CSB-EL024101RA	Rat	serum, plasma, tissue homogenates

Protein			
Target	Code	Species	Source
TPH2	CSB-CF809000HU	Homo sapiens	in vitro E.coli expression system

Antibody			
Target	Code	Species Reactivity	Application
FEV	CSB-PA858717LA01HU	Human, Rat	ELISA, WB, IHC, IF
TPH2	CSB-PA809000LA01HU	Human, Mouse, Rat	ELISA, WB, IHC, IF

Serotonergic neurons-serotonin. Serotonin (5-Hydroxytryptamine, 5-HT) can act as excitatory or inhibitory. Of the four 5-HT receptor classes, 3 are GPCR and 1 is ligand gated cation channel. Serotonin is synthesized from tryptophan by tryptophan hydroxylase, and then further by aromatic acid decarboxylase. A lack of 5-HT at postsynaptic neurons has been linked to depression. Drugs that block the presynaptic serotonin transporter are used for treatment, such as Prozac and Zoloft.

© Glial-Astrocyte

Kit			
Target	Code	Species	Sample types
GAP43	CSB-EL009231RA	Rat	serum, plasma, cell lysates, tissue homogenates
GFAP	CSB-E08601h	Human	serum, plasma, tissue homogenates
GFAP	CSB-E08603m	Mouse	serum, plasma, tissue homogenates
ITGAM	CSB-E11638h	Human	serum, plasma, tissue homogenates
LGALS3	CSB-E11807h	Human	serum, plasma, cell culture supernates, tissue homogenates, saliva
LGALS3	CSB-E14296m	Mouse	serum, plasma, tissue homogenates
LGALS3	CSB-EL012887RA	Rat	serum, plasma, tissue homogenates
S100B	CSB-EL020643DO	Dog	serum, plasma, tissue homogenates
S100B	CSB-E08065h	Human	serum, plasma, tissue homogenates, cerebrospinal fluid (CSF)
S100B	CSB-EL020643MO	Mouse	serum, plasma, tissue homogenates
S100B	CSB-E06895Rb	Rabbit	serum, plasma, tissue homogenates
TUBB3	CSB-E14121h	Human	serum, plasma, tissue homogenates, cell lysates
VIM	CSB-E08982h	Human	serum, plasma, tissue homogenates

Protein			
Target	Code	Species	Source
Birc5	CSB-EP002706MO	Mouse	E.coli
Birc5	CSB-YP002706MO	Mouse	Yeast
BIRC5	CSB-EP002706HU	Human	E.coli
GFAP	CSB-EP009369MO	Mouse	E.coli
gfap	CSB-EP009369DIL	Zebrafish	E.coli
Lgals3	CSB-EP012887RA	Rat	E.coli
Slc1a2	CSB-EP021433MO	Mouse	E.coli
Slc1a2	CSB-YP021433MO	Mouse	Yeast
SOX2	CSB-EP022426HU	Human	E.coli
TUBB3	CSB-RP038744h	Human	E.coli

Antibody			
Target	Code	Species Reactivity	Application
BIRC5	CSB-PA07249A0Rb	Human	ELISA, IF
CORO1A	CSB-PA005813LA01HU	Human, Mouse	ELISA, WB, IHC, IF
GAP43	CSB-PA009231DSR1HU	Human	ELISA
GFAP	CSB-PA009369LA01HU	Human, Mouse, Rat	ELISA, WB, IHC, IF
GFRA1	CSB-PA009379LA01HU	Human, Mouse	ELISA, WB, IHC, IF
GFRA2	CSB-PA009380LA01HU	Human, Mouse	ELISA, WB, IF
GFRA3	CSB-PA009381LA01HU	Human	ELISA, IHC, IF
ITGAM	CSB-PA011876LA01HU	Human	ELISA, IHC, IF
LGALS3	CSB-PA012887YA01HU	Human	ELISA, WB, IHC
PINK1	CSB-PA863144LA01HU	Human	ELISA, IHC
SLC1A2	CSB-PA021433LA01HU	Human	ELISA, IHC, IF
SOX2	CSB-PA16539A0Rb	Human	ELISA, IHC, IF
TNFRSF19	CSB-PA878878LA01HU	Human	ELISA, IF
TUBB3	CSB-PA03879A0Rb	Human, Mouse	ELISA, WB, IHC, IF
VIM	CSB-PA025857LA01HU	Human	ELISA, WB, IHC, IF

Astrocytes, also known collectively as astroglia, are characteristic star-shaped glial cells in the brain and spinal cord. The proportion of astrocytes in the brain is not well defined. Depending on the counting technique used, studies have found that the astrocyte proportion varies by region and ranges from 20% to 40% of all glia. They perform many functions, including biochemical support of endothelial cells that form the blood-brain barrier, provision of nutrients to the nervous tissue, maintenance of extracellular ion balance, and a role in the repair and scarring process of the brain and spinal cord following traumatic injuries.

© Microglia

Kit			
Target	Code	Species	Sample types
AIF1	CSB-EL001490HU	Human	serum, plasma, tissue homogenates
AIF1	CSB-EL001490MO	Mouse	serum, plasma, tissue homogenates, cell lysates
CD40LG	CSB-E04716h	Human	serum, plasma, tissue homogenates
CD40LG	CSB-E07395r	Rat	serum, plasma, tissue homogenates
CD40LG	CSB-E04717m	Mouse	serum, plasma, cell culture supernates, tissue homogenates
Cd68	CSB-E15979h	Human	serum, plasma, tissue homogenates

Antibody			
Target	Code	Species Reactivity	Application
AIF1	CSB-PA00667A0Rb	Human	ELISA, IHC, IF
CD40LG	CSB-PA06005A0Rb	Human	ELISA
Cd68	CSB-PA004951ESR2HU	Human	ELISA, IHC

Protein			
Target	Code	Species	Source
AIF1	CSB-EP001490HU	Human	E.coli
Aif1	CSB-EP001490MO	Mouse	E.coli
CD40LG	CSB-EP004937RB	Rabbit	E.coli
CD40LG	CSB-RP060054h	Human	E.coli
CD40LG	CSB-YP004937RB	Rabbit	Yeast
CD40LG	CSB-YP004937HU1	Human	Yeast
CD40LG	CSB-EP004937MOW	Macaca mulatta	E.coli
Cd68	CSB-EP004951MO	Mouse	E.coli
Cd68	CSB-YP004951MO	Mouse	Yeast
PTPRC	CSB-YP019049HU	Human	Yeast
PTPRC	CSB-EP019049HU	Human	E.coli

Microglia are a type of neuroglia (glial cell) located throughout the brain and spinal cord. Microglia account for 10-15% of all cells found within the brain. As the resident macrophage cells, they act as the first and main form of active immune defence in the central nervous system (CNS). Microglia (and other neuroglia including astrocytes) are distributed in large non-overlapping regions throughout the CNS.

© Oligodendrocyte

Kit			
Target	Code	Species	Sample types
MAG	CSB-E17901h	Human	serum, plasma, cerebrospinal fluid (CSF)
MBP	CSB-E08283h	Human	serum, plasma, tissue homogenates, cell culture supernates
MBP	CSB-E08285m	Mouse	serum, plasma, tissue homogenates
MBP	CSB-E08284r	Rat	serum, plasma, tissue homogenates
OMG	CSB-EL016334HU	Human	serum, plasma, tissue homogenates
PDGFRA	CSB-E04699m	Mouse	serum, plasma, tissue homogenates, cell lysates

Protein			
Target	Code	Species	Source
cnp	CSB-YP323831BZH	Anguilla japonica	Yeast
GALC	CSB-YP009196HU	Human	Yeast
Galc	CSB-CF009196MO	Mouse	in vitro E.coli expression system
MAG	CSB-EP013322HU	Human	E.coli
MAG	CSB-YP013322HU	Human	Yeast
OLIG1	CSB-YP016328HU	Human	Yeast
OLIG2	CSB-EP623814HU	Human	E.coli

Antibody			
Target	Code	Species Reactivity	Application
ABCA2	CSB-PA887172LA01HU	Human	ELISA, IHC
CNP	CSB-PA21939A0Rb	Human	ELISA, IHC
CNTNAP2	CSB-PA887030ESR2HU	Human	ELISA
MAG	CSB-PA013322LA01HU	Human	ELISA, WB, IHC, IF
MBP	CSB-PA013551LA01HU	Human, Mouse, Rat	ELISA, WB, IHC, IF
OLIG1	CSB-PA016328YA01HU	Human, Mouse, Rat	ELISA, WB
OMG	CSB-PA016334ESR2HU	Human	ELISA, IHC
PDGFRA	CSB-PA017712LA01HU	Human, Mouse	ELISA, WB, IF
RNF5	CSB-PA857879DSR2HU	Human	ELISA, WB, IHC
RTN4R	CSB-PA880152ESR1HU	Human	ELISA

Oligodendrocytes are a type of neuroglia discovered by Pío del Río Hortega. Their main functions are to provide support and insulation to axons in the central nervous system of some vertebrates, equivalent to the function performed by Schwann cells in the peripheral nervous system. Oligodendrocytes do this by creating the myelin sheath, which is 80% lipid and 20% protein. A single oligodendrocyte can extend its processes to 50 axons, wrapping approximately 1 µm of myelin sheath around each axon; Schwann cells, on the other hand, can wrap around only one axon. Each oligodendrocyte forms one segment of myelin for several adjacent axons.

©Neural Stem Cell

Kit			
Target	Code	Species	Sample types
ABCG2	CSB-E11251h	Human	serum, plasma, cell lysates, cell culture supernates
BMI1	CSB-EL002726HU	Human	serum, plasma, tissue homogenates, cell lysates
CDH2	CSB-E09718h	Human	serum, plasma, tissue homogenates
CTNNB1	CSB-E08963h	Human	serum, plasma, cell culture supernates, tissue homogenates, cell lysates
CTNNB1	CSB-E11307m	Mouse	serum, plasma, tissue homogenates, cell lysates
CXCR4	CSB-E12825h	Human	serum, plasma, tissue homogenates
CXCR4	CSB-E12703r	Rat	serum, plasma, cell culture supernates, tissue homogenates
FABP3	CSB-E09185h	Human	serum, plasma, tissue homogenates
FABP3	CSB-E16184r	Rat	serum, plasma, cell culture supernates, tissue homogenates
NFE2L2	CSB-EL015752HU	Human	serum, plasma, urine, tissue homogenates, cell lysates
NFE2L2	CSB-E16188m	Mouse	serum, plasma, cell culture supernates
NOG	CSB-EL015917HU	Human	serum, plasma
NOG	CSB-EL015917MO	Mouse	serum, plasma, tissue homogenates, cell culture supernates
NOTCH1	CSB-EL015949HU	Human	serum, plasma, tissue homogenates
PAX6	CSB-EL017492MO	Mouse	serum, plasma, tissue homogenates
SFRP2	CSB-EL021139HU	Human	serum, plasma, cell culture supernates, tissue homogenates, cell lysates
SMARCA4	CSB-EL021801HU	Human	serum, plasma, tissue homogenates, cell lysates

Protein			
Target	Code	Species	Source
BMI1	CSB-RP033454h	Human	E.coli
CTNNB1	CSB-YP006169HU	Human	Yeast
CXCR4	CSB-EP006254HU1	Human	E.coli
CXCR4	CSB-CF006254HU	Human	in vitro E.coli expression system
CXCR4	CSB-CF006254HUa0	Human	in vitro E.coli expression system
Fabp3	CSB-EP007943RA	Rat	E.coli
FABP3	CSB-MP007943RA	Rat	Mammalian cell
ID2	CSB-EP010967HU	Human	E.coli
NES	CSB-YP015713HU	Human	Yeast
OTX2	CSB-EP017299HU	Human	E.coli
PROM1	CSB-YP018751HU	Human	Yeast
Prom1	CSB-EP018751MO	Mouse	E.coli
SMARCA4	CSB-YP021801HU	Human	Yeast

Neural stem cells (NSCs) are self-renewing, multipotent cells that generate the neurons and glia of the nervous system of all animals during embryonic development. Some neural stem cells persist in the adult vertebrate brain and continue to produce neurons throughout life. Stem cells are characterized by their capacity to differentiate into multiple cell types. They undergo symmetric or asymmetric cell division into two daughter cells. In symmetric cell division, both daughter cells are also stem cells. In asymmetric division, a stem cell produces one stem cell and one specialized cell. NSCs primarily differentiate into neurons, astrocytes, and oligodendrocytes.

Antibody			
Target	Code	Species Reactivity	Application
ABCG2	CSB-PA891568LA01HU	Human	ELISA, IF
ASCL1	CSB-PA002199LA01HU	Human	ELISA, IHC
BMI1	CSB-PA03345A0Rb	Human	ELISA, WB, IHC
CALCR	CSB-PA004439ESR1HU	Human	ELISA, IHC
CDCP1	CSB-PA884474ESR2HU	Human	ELISA, IHC
CDH2	CSB-PA005045LA01HU	Human, Mouse	ELISA, WB, IF
CTNNB1	CSB-PA00174A0Rb	Human	ELISA, WB, IHC, IF, IP
CXCR4	CSB-PA006254YA01HU	Human, Mouse	ELISA, WB, IHC, IF
FABP3	CSB-PA07764A0Rb	Human, Mouse, Rat	ELISA, WB, IHC
FABP7	CSB-PA007956LA01HU	Human	ELISA, IHC, IF
FGFR4	CSB-PA008648LA01HU	Human	ELISA, IHC, IF
FOXD3	CSB-PA890729LA01HU	Human	ELISA, IHC, IF
FZD9	CSB-PA009112LA01HU	Human, Mouse	ELISA, WB, IHC
GATA2	CSB-PA340572ESR1HU	Human	ELISA, IHC
GNL3	CSB-PA874819ESR2HU	Human	ELISA, IHC
HOXB1	CSB-PA010660ESR1HU	Human	ELISA
ID2	CSB-PA010967LA01HU	Human	ELISA, IHC, IF
LRTM1	CSB-PA884513LA01HU	Human	ELISA, WB, IHC, IF
MSI1	CSB-PA015033LA01HU	Human	ELISA, IHC, IF
MSI2	CSB-PA836197ESR2HU	Human	ELISA, IHC
MSX1	CSB-PA015068LA01HU	Human	ELISA, IHC
NES	CSB-PA015713YA01HU	Human	ELISA, IHC, IF
NEUROD1	CSB-PA615700LA01HU	Human	ELISA, IF
NOG	CSB-PA015917LA01HU	Human	ELISA, IHC
NOTCH1	CSB-PA015949LA01HU	Human	ELISA, IHC, IF
NOTCH2	CSB-PA015950LA01HU	Human	ELISA, IHC, IF
NR2F1	CSB-PA016056LA01HU	Human	ELISA, WB
NUMB	CSB-PA016186DSR2HU	Human, Mouse	ELISA, WB
OTX2	CSB-PA017299LA01HU	Human, Mouse, Zebrafish	ELISA, WB, IHC
PAX3	CSB-PA017489HA01HU	Human	ELISA, WB, IHC, IF
PAX6	CSB-PA017492DSR2HU	Human	ELISA, IHC
PRKCZ	CSB-PA15889A0Rb	Human	ELISA, IF
PROM1	CSB-PA018751LA01HU	Human	ELISA, WB, IHC
ROR2	CSB-PA21119A0Rb	Human	ELISA, IHC, IF
SFRP2	CSB-PA021139LA01HU	Human	ELISA, IF
SLAIN1	CSB-PA850864LA01HU	Human	ELISA, WB, IHC
SLC2A1	CSB-PA021546ESR2HU	Human, Mouse	ELISA, WB, IHC
SMARCA4	CSB-PA021801LA01HU	Human	ELISA, IHC
SOX11	CSB-PA022419LA01HU	Human	ELISA, IHC
SOX21	CSB-PA896749LA01HU	Human	ELISA, IF
SOX9	CSB-PA022437LA01HU	Human	ELISA, IHC, IF
TRAF4	CSB-PA024152ESR1HU	Human	ELISA, IHC

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