

# Glossary

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15-HETE:	15-hydroxyeicosatetraenoic acid	APDC:	2R,4R-4-aminopyrrolidine-2,4-dicarboxylate
2R CPPene:	3-(2-carboxypiperazin-4-yl)1-propeny-1-phosphonic acid	APME:	acute post-infectious measles encephalomyelitis
4-DAMP:	4-diphenylacetoxymethylpiperidine methiodide	ApoE:	apolipoprotein E
5,7-DCK:	5,7-dichlorokynurenic acid	APP:	amyloid precursor protein
5-HT:	5-hydroxytryptamine (serotonin)	AR:	adenosine receptor
6-OHDA:	6-hydroxydopamine	Arp2/3:	actin-activated protein complex 2/3
AA:	arachidonic acid	ARX:	aristaless related homeobox gene
AAAD:	aromatic amino acid decarboxylase	Atoh1:	atonal homolog 1
ABC:	ATP-binding cassette	ATP:	adenosine triphosphate
ABP:	AMPA receptor-binding protein	BBB:	blood-brain barrier
ACh:	acetylcholine	Bcl-2:	B-cell lymphoma-2
AChBP:	acetylcholine-binding protein	BCR:	B-cell receptor
AChE:	acetylcholinesterase	BD:	bipolar disorder
AChR:	acetylcholine receptor	BDNF:	brain derived nerve growth factor
ACIII:	type III adenylyl cyclase	BF:	basal forebrain
ACTH:	adrenocorticotrophic hormone	BFC:	basal forebrain complex
AD:	Alzheimer's disease	BH <sub>4</sub> :	(6R)-L-erythro-tetrahydrobiopterin
ADA:	adenosine deaminase	BMAA:	β-N-methylamino-L-alanine
ADEM:	acute disseminated encephalomyelitis	BOAA:	β-N-oxalylamino-L-alanine
ADHD:	attention deficit hyperactivity disorder	BOLD:	blood oxygen level desaturation
ADP:	adenosine diphosphate	BoNT:	botulinum neurotoxin
ADPase:	ecto-ATP-diphosphohydrolase	CA:	cornu ammonis
ADPCP:	5'-adenosyl-methylene-triphosphate	CA1:	cornu ammonis region 1 of the hippocampus
AFDX 116:	11-[[2-[(diethylamino)methyl]-1-piperidinyl]acetyl]-5,11-dihydro-6H-pyrido[2,3-b][1,4]benzodiazepin-6-one	CA2:	cornu ammonis region 1 of the hippocampus
AKAP:	A-kinase anchor protein	CA3:	cornu ammonis region 3 of the hippocampus
ALD:	adrenoleukodystrophy	CAE:	childhood absence epilepsy
Allodynia:	a painful response to usually innocuous stimulation	CaM:	calmodulin
ALS:	amyotrophic lateral sclerosis	CAM:	cell adhesion molecule
AMAN:	acute motor axonal neuropathy	CaMKII:	calcium calmodulin-dependent protein kinase II
AMD:	age-related macular degeneration	cAMP:	adenosine 3', 5'-cyclic monophosphate
AMOG:	adhesion molecule on glia	CAPS:	calcium-dependent activator protein for secretion
AMP:	adenosine monophosphate	Car4:	carbonic anhydrase Type 4
AMPA:	α-amino-3-hydroxy-5-methyl-4-isoxazole propionic acid	CARD:	caspase recruitment domain
AMPK:	AMP-activated protein kinase	CART:	cocaine- and amphetamine-regulated transcript
AMPT:	α-methyl-p-tyrosine	CAT:	computer assisted tomography
AMY:	amygdala	CBD:	cannabidiol; 2-AG, 2-arachidonyl glycerol
ANO2:	anoctamin 2	CBD:	Corticobasal degeneration
ANS:	autonomic nervous system	CBP:	CREB binding protein
Anterograde:	movement from the cell body to the distal axon and presynaptic terminals	CCK:	Cholecystokinin
AOPCP:	α,β-methylene-adenosine diphosphate	CCV:	Clathrin-coated vesicles
AP:	adaptor protein, mediates protein-protein interactions as for clathrin	CDC-25:	cell division cycle 25 homolog domain
APC:	antigen-presenting cell	CDH23:	cadherin 23
		CDK5:	cyclin-dependent kinase-5

CDP-DAG:	cytidine diphosphodiacylglycerol	DSE:	depolarization-induced suppression of excitation
cGMP:	guanosine 3',5'-cyclic monophosphate	DSI:	depolarization-induced suppression of inhibition
CGRP:	calcitonin gene-related peptide	DSP:	dual-specificity phosphatases
ChAT:	choline acetyltransferase	DTI:	diffusion tension imaging
ChIP:	chromatin immunoprecipitation assay	EAAT:	excitatory amino acid transporter
ChT:	high affinity choline transporter	EAE:	experimental allergic encephalomyelitis
CIDP:	chronic inflammatory demyelinating polyneuropathy	ECM:	extracellular matrix
CJD:	Creutzfeldt-Jakob disease	EDRF:	endothelium-derived relaxing factor
C-KIP:	PKC interacting protein	EEG:	electroencephalogram
CM:	centromedian nucleus of the thalamus	EF:	E-F hand domain
CMT:	Charcot-Marie-Tooth disease	EGFP:	enhanced green fluorescent protein
c-myc:	myelocytomatosis oncogene	EGFR:	epidermal growth factor receptor
CNG channel:	cyclic nucleotide-gated channel	E <sub>ion</sub> :	Nernst equilibrium potential for an ion
CNP:	cyclic nucleotide 3'-phosphodiesterase	ELH:	egg-laying hormone
CNS:	central nervous system	EMG:	electromyogram
CNT:	concentrative nucleoside transporter	ENaC:	epithelial sodium channel
CNTFR:	ciliary neurotrophic factor receptor	ENT:	equilibrative nucleoside transporter
CO:	carbon monoxide	ENTH:	Epsin N-terminal homology domain that binds to PI(4,5)P <sub>2</sub>
ColQ:	collagenous subunit called Q	EOG:	electrooculogram
COMT:	Catechol-o-methyl transferase	Epi:	Epinephrine
COX:	cyclooxygenase	EPP:	endplate potential
CPE:	carboxypeptidase E	EPSC:	excitatory postsynaptic current
CPEB:	cytoplasmic polyadenylation element binding protein	EPSP:	excitatory postsynaptic potential
CPON:	C-terminal flanking peptide of NPY	ERK:	extracellular signal-regulated kinase
CREBP:	cAMP response element binding protein	ERM:	ezzrin, radixin, moesin
CREM:	cAMP-response element modulator	ERP:	event-related potentials
CRF:	corticotropin-releasing factor	ES:	embryonic stem cells
CRH:	corticotropin-releasing hormone	FAD:	flavin adenine dinucleotide
CSF:	Cerebral spinal fluid	FAK:	focal adhesion kinase
CTS:	Cardiotonic steroids	FAT:	fast axonal transport
CX32:	Cosnneixin 32	FERM:	domain found in 4.1, Ezrin, Radixin and Moesin proteins that binds PI(4,5)P <sub>2</sub>
Cx43:	connexin 43	FFI:	fatal familial insomnia
DA:	dopamine	FGF:	fibroblast growth factor
DAAO:	D-amino acid oxidase	fMRI:	functional magnetic resonance imaging
DAG:	diacylglycerol	FPR:	formyl peptide receptor
DAMP:	danger-associated molecular patterns	FSCN2:	fascin-2
DAO:	diamine oxidase	FTD:	frontotemporal dementia
D-AP5:	D-2-amino-5-phosphonopentanoic acid	FTDP-17T:	frontotemporal dementia and parkinsonism linked to chromosome 17 with <i>MAPT</i> mutations
DARPP-32:	dopamine and cyclic AMP related neuronal phosphoprotein	FXD:	A family of membrane proteins beginning with the signature sequence FXD at the amino-terminus and involved in regulation of cation transporters
DAT:	dopamine transporter	FYVE:	Zinc finger domain that binds to PI3P; named after the 4 proteins in which it is found (Fab 1, YOTB, Vac1 and EEA1)
DAVID:	database for annotation, visualization and integrated discovery	G protein:	GTP-binding protein
DBH:	dopamine-β-hydroxylase	GABA:	gamma-aminobutyric acid
DBM:	dopamine β-monooxygenase	GAD:	glutamic acid decarboxylase
DEG/ENaC:	degenerin/epithelial sodium channel	GAP:	GTPase activating protein
DFP:	diisopropylfluorophosphate	GAT-1:	GABA transporter 1
DHA:	docosahexaenoic acid	GBA:	glucocerebrosidase gene
DHPG:	3,4-dihydroxyphenylglycol	GBS:	Guillain-Barré syndrome
DHPG:	3,5-dihydroxyphenylglycine	GCAPs:	guanylate cyclase activating proteins
DLB:	dementia with Lewy bodies	GC-D:	receptor guanylyl cyclase type D
DNA:	deoxyribonucleic acid		
DNMT:	DNA N-methyltransferase		
DOPAC:	3,4-dihydroxyphenylacetic acid		
DOP-R:	delta-opioid receptor		
DR:	dorsal raphe nucleus		
DRG:	dorsal root ganglia		
DSCAM:	Down syndrome cell adhesion molecule		

GCL:	ganglion cell layer	HVA:	homovanillic acid
GCPII:	glutamate carboxy peptidase II	I(1,4,5)P <sub>3</sub> :	inositol 1,4,5-trisphosphate
GDH:	glutamate dehydrogenase	IFN $\gamma$ :	interferon gamma
GDNF:	glial cell line-derived neurotrophic factor	Ig:	immunoglobulin
GEF:	guanine nucleotide exchange factor	IGF:	insulin growth factor
GEMSA:	guanidinoethylmercaptosuccinic acid	ILGFR:	insulin-like growth factor receptor
GF:	growth factor	IL:	interleukin
GFAP:	glial fibrillary acidic protein	IL6:	interleukin-6
GFP:	green fluorescent protein	IMP:	inosine monophosphate
GHB:	gamma-hydroxybutyric acid	INL:	inner nuclear layer
GIRK:	G-protein-activated inwardly rectifying K <sup>+</sup> channel	INPP:	inositol polyphosphatase
GK:	guanylate kinase	IP <sub>3</sub> :	inositol 1,4,5-trisphosphate
Glc:	glucose	IP <sub>6</sub> :	inositol 1,2,3,4,5,6 hexakisphosphate
GLN:	glutamine	IPN:	interpeduncular nucleus
GLU:	glutamic acid	iPS:	induced pluripotent stem cells
GluA:	AMPA receptor subunit	IS:	inner segment
GluK:	kainate receptor subunit	ISL:	inner segment layer
GluN:	NMDA receptor subunit	ISO:	Isoproterenol
GLUT:	glucose transporter	JAK:	janus kinase
GlyR:	glycine receptor	JME:	juvenile myoclonic epilepsy
GlyT:	glycine transporter	JP:	joining peptide
GM-CSF:	granulocyte-macrophage colony stimulating factor	KA:	kainic acid
GnRH:	gonadotropin-releasing hormone	KCC2:	K <sup>+</sup> Cl <sup>-</sup> cotransporter
GPCR:	G protein-coupled receptor	KCNQ:	potassium voltage-gated channel, KQT-like subfamily
GPI:	glycophosphatidylinositol	Kir:	K <sup>+</sup> inward rectifier
G-protein:	GTP-binding protein	Klf4:	Kruppel-like factor 4
GR:	glucocorticoid receptor	KOP-R:	kappa-opioid receptor
Grb2:	growth factor receptor binding protein 2	K <sub>v</sub> 1.1:	Potassium voltage-gated channel subfamily A member 1
GRE:	glucocorticoid response element	LACHU:	low affinity choline uptake
GRIP:	glutamate receptor-interacting protein	L-AP4:	L-amino-4-phosphonobutyrate
GRK:	G-protein receptor kinase	LC:	Locus coeruleus
GSK:	glycogen synthase kinase	LDCV:	large dense-core vesicle
GSK3 $\beta$ :	glycogen synthase kinase-3beta	LDLR:	low-density lipoprotein receptor
GSK3:	glycogen synthase kinase-3	L-DOPA:	Levo-3,4-dihydroxy-l-phenylalanine
GSS:	Gerstmann-Sträussler-Scheinker disease	LDT:	laterodorsal tegmental nucleus
GTRAP:	glutamate receptor-associated proteins	LG11:	leucine rich glioma inactivated 1
H2A:	histone 2 subunit A	LGN:	lateral geniculate nucleus
H2B:	histone 2 subunit B	LH:	lateral hypothalamus
H <sub>2</sub> S:	hydrogen sulfide	LHRH:	luteinizing hormone releasing hormone
H3:	histone 3	LIFR:	leukemia inhibitory factor receptor
H3K4:	histone 3, lysine 4	LMC:	Lateral Motor Column
H3K9:	histone 3, lysine 9	LO:	lipoxygenase
H4:	histone 4	LPS:	lipopolysaccharide
HACHU:	high-affinity choline uptake	LRAT:	lecithin:retinol acyl transferase
HAT:	histone acetyltransferase	LRR:	leucine-rich repeats
Hcrt-r:	hypocretin receptor	LRRK2:	Leucine-rich repeat kinase-2
HDAC:	histone deacetylase	LSD:	lysergic acid diethylamide
HDC:	histidine decarboxylase	LT:	leukotriene
HDL:	high-density lipoprotein	LTB4:	leukotriene B4
HGPRT:	hypoxanthine-guanine phosphoribosyltransferase	LTC4:	leukotriene C4
HHSiD:	hexahydrosiladifenidol	LTD:	long Term Depression
HIV-1:	human immunodeficiency virus-1	LXA4:	lipoxin A4
HLH:	helix loop helix	M:	muscarinic cholinergic
HMT:	histamine N-methyltransferase	M1-M4:	four membrane-spanning helical domains present in each subunit of the cys-loop pentameric ligand-gated ion channels, including GABA <sub>A</sub> receptors
HO-2:	heme oxygenase 2	mACHR:	muscarinic acetylcholine receptor
HPA:	hypothalamic pituitary adrenal		
HPX:	hyperekplexia		

BASIC NEUROCHEMISTRY

PGE2:	prostaglandin E2	PTEN:	phosphatase and tensin homolog
PH:	pleckstrin homology	PTH:	parathyroid hormone
PHF:	Paired helical filament	PTK:	protein tyrosine kinases
PHM:	peptidylglycine $\alpha$ -hydroxylating monooxygenase	PTP:	protein tyrosine phosphatases
PI(3,4,5)P <sub>3</sub> :	phosphatidylinositol 3,4,5-trisphosphate	PTSD:	post-traumatic stress disorder
PI(3,5)P <sub>2</sub> :	phosphatidylinositol 3,5-bisphosphate	PUFA:	polyunsaturated fatty acids
PI(4,5)P <sub>2</sub> :	phosphatidylinositol 4,5-bisphosphate	PVN:	paraventricular nucleus
PI:	phosphatidylinositol	PYR:	pyrin domain
PI3K:	phosphatidylinositol 3-kinase	QC:	glutaminy cyclase
PI3P:	phosphatidylinositol 3-phosphate	QNB:	quinuclidinyl benzilate
PI4K:	phosphatidylinositol 4-kinase	RA:	retinoic acid
PI4P:	phosphatidylinositol 4-phosphate	RACK:	receptor for activated C-kinase
PIB:	Pittsburgh Compound B	RATK:	receptor with associated tyrosine kinase activity
PICK 1:	protein interacting with C kinase 1	REM:	rapid eye movement
P <sub>ion</sub> :	membrane permeability for an ion	RGCs:	Retinal Ganglion Cells
PIP:	phosphatidylinositol 4-phosphate	RGS:	Regulators of G protein signaling
PIP <sub>2</sub> :	phosphatidylinositol 4,5-bisphosphate	RLS:	restless legs syndrome
PIPK:	phosphatidylinositol phosphate kinase	RNA:	ribonucleic acid
PKA:	protein kinase A	RNS:	reactive nitrogen species
PKB:	protein kinase B (Akt)	ROS:	reactive oxygen species
PKC:	protein kinase C	RPE:	retinal-pigmented epithelium
PKG:	protein kinase G	RPTK:	receptor protein tyrosine kinases
PKN:	protein kinase C-related kinase that bind activated Rho	RPTP:	Receptor Protein Tyrosine Phosphatases
PKU:	phenylketonuria	RTK:	receptor with intrinsic tyrosine kinase activity
PLA <sub>2</sub> :	phospholipase A2	S1P:	site-1 protease
PLC:	phosphoinositide-specific phospholipase C	SA:	system A (neuronal) glutamine transporter
PLIP:	PTEN-like lipid phosphatase	Sac:	suppressor of actin
PLP:	proteolipid protein	SAH:	S-adenosyl homocysteine
PLS1:	plastin-1	SAM:	S-adenosylmethionine
PMCA:	plasma membrane Ca <sup>2+</sup> ATPase and transporter	SANS:	scaffold protein containing ankyrin repeats and SAM domain
PML:	progressive multifocal leukoencephalopathy	SAP 97:	synapse-associated protein of 97 KDa
PMP-22:	peripheral myelin protein-22	SAP kinase:	stress-activated protein kinase
PnC:	pontine reticular nucleus, caudal part	SAP:	synapse associated protein
PNMT:	phenylethanolamine-N-methyltransferase	SAT:	slow axonal transport
PnO:	pontine reticular nucleus, oral part	SCN1A:	$\alpha$ subunit of voltage-gated Na <sup>+</sup> channel
PNS:	peripheral nervous system	SERCA:	sarco/endoplasmic reticulum Ca <sup>2+</sup> -ATPase
POMC:	proopiomelanocortin	SERT:	serotonin transporter
PP1:	protein phosphatase 1	SF:	straight filament
PP2A:	protein phosphatase 2A	SH2:	Src homology 2 domain
PPI:	Pre-pulse inhibition	SH3:	Src homology 3 domain
PPT:	pedunculopontine tegmental nucleus	SHC:	Src homology 2 domain containing adaptor protein
PRAD:	proline-rich N-terminal attachment domain	SHIP:	Src homology containing inositol phosphatase
PRF:	pontine reticular formation	SHMT:	serine hydroxymethyltransferase
PRiMA:	proline-rich membrane anchor	SLC:	solute carrier
PRNP:	the human prion protein gene; mouse gene is designated <i>Prnp</i>	SLC26A:	solute carrier family 26
PrP:	prion protein	SN:	system N (astrocyte) glutamine transporter
PrP <sup>C</sup> :	the normal cellular isoform of PrP; rich in $\alpha$ -helical structure	SNAP:	synaptosomal associated protein
PrP <sup>Sc</sup> :	the "Scrapie" or disease-associated isoform of PrP, which differs from PrP <sup>C</sup> in its conformation and is generally found as insoluble aggregated material rich in $\beta$ -sheet structure	SNAP-25:	soluble N-ethylmaleimide-sensitive factor attachment protein-25
PRR:	pattern recognition receptors	SNCA:	$\alpha$ -synuclein gene
PSD:	post-synaptic density	SNPs:	single nucleotide polymorphisms
PSP:	progressive supranuclear palsy	SNS:	sympathetic nervous system
		SOD:	superoxide dismutase



SOS:	son of sevenless	TNF $\alpha$ :	tumor necrosis factor alpha
Sox2:	SRY(sex determining region Y) box 2 transcription factor	TOR:	Target of rapamycin
SPECT:	single photon emission computerized tomography	TPA:	tetradecanoyl phorbol acetate
Src:	From sarcoma; a family of non-receptor tyrosine kinases; gene similar to a gene from Rous sarcoma virus	TPH:	tryptophan hydroxylase
SSRIs:	selective serotonin reuptake inhibitors	TPST:	tyrosylprotein sulfotransferase
STG:	Stargazin	TRC:	taste receptor cell
STN:	subthalamic nucleus	Treg:	CD4+ T regulatory cell
SUT-2:	Suppressor of tau pathology-2	TREM:	trigger receptor expressed on myeloid cells
SYN:	Syntenin	TRH:	thyrotropin releasing hormone
SynCAM:	synaptic cell adhesion molecule	TrkB:	tropomyosin-related kinase B
T1R:	Type 1 taste receptor	TRP:	transient receptor potential
T2R:	Type 2 taste receptor	TRPN:	transient receptor potential channel NOMPC family
TAAR:	trace amine-associated receptor	TRPV:	transient receptor potential channel vanilloid family
TARPs:	trans-membrane AMPA-R regulatory proteins	TTX:	tetrodotoxin
TCA:	tricarboxylic acid	TXA2:	thromboxane A2
TCR:	T-cell receptor	Ubx:	ultrabithorax gene
TFIIA:	transcription factor II A subunit	UDP:	uridine diphosphate
TFIID:	transcription factor II D subunit	UR:	untranslated region
TGF:	transforming growth factor (also referred to as tumor growth factor)	UTF1:	undifferentiated embryonic cell transcription factor 1
Th:	T helper cell	UTP:	uridine triphosphate
TH:	Tyrosine hydroxylase	V1R:	type 1 vomeronasal receptor
THC:	$\Delta^9$ -tetrahydrocannabinol	V2R:	type 2 vomeronasal receptor
THIP (aka gaboxadol):	4,5,6,7-tetrahydroisoxazolo-[5,4-c]pyridin-3-ol	VACHT:	vesicular acetylcholine transporter
TIPeR:	transcriptome induced phenotype remodeling	vCJD:	variant CJD; see CJD
TLE:	temporal lobe epilepsy	VGLUT:	vesicular glutamate transporter
TLR:	toll-like receptor	VIAAT (vGAT):	vesicular transporter for glycine
TM 3, 5:	trans-membrane domains 3, 5	VIP:	vasoactive intestinal peptide
TM:	tuberomamillary	VLPAG:	ventrolateral periaqueductal gray
TMD:	Transmembrane domains	VLPO:	ventrolateral preoptic area
t-MH:	tele-methylhistamine	VMA:	vanillylmandelic acid
t-MIAA:	tele-methylimidazole acetic acid	VMAT:	vesicular monoamine transporter
TMN:	tuberomammillary nucleus	VMH:	ventromedial hypothalamus
		VNO:	vomeronasal organ
		VNUT:	vesicular nucleotide transporter
		VPA:	valproic acid
		VSN:	vomeronasal sensory neuron
		VTA:	ventral tegmental area
		WNT:	Wingless