

VU Research Portal

Regulation of neurotransmitter release by C-domain Ca²-sensors

Bourgeois-Jaarsma, Q.

2020

document version

Publisher's PDF, also known as Version of record

[Link to publication in VU Research Portal](#)

citation for published version (APA)

Bourgeois-Jaarsma, Q. (2020). Regulation of neurotransmitter release by C-domain Ca²-sensors. [PhD-Thesis - Research and graduation internal, Vrije Universiteit Amsterdam].

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

E-mail address:

vuresearchportal.ub@vu.nl

List of abbreviations (by order of appearance)

AP – Action potential
 AZ – Active zone
 VGCC – Voltage-gated-Ca²⁺-channel
 AMPA - α -amino-3-hydroxy-5-methyl-4-isoxazolepropionic acid
 NMDA - N-methyl-D-aspartate
 GABA - Gamma-aminobutyric acid
 RRP - Ready releasable pool
 SV - Synaptic vesicle
 RP - recycling pool
 EPSC - excitatory postsynaptic current
 Pr - release probability
 Pvr - vesicular release probability
 IRP - immediate releasable pool
 Syt - Synaptotagmin
 Doc2 – Double C₂ (protein)
 NSF - N-ethylmaleimide-sensitive factor
 SNARE - Soluble NSF Attachment Protein Receptor
 VAMP2 (synaptobrevin-2) - Vesicle Associated Membrane Protein-2
 Syb-2 - synaptobrevin-2
 SNAP-25 - Synaptosome Associated Protein 25
 TMD - TransMembrane Domain
 PM – Plasma Membrane
 SM - Sec-1/Munc-18
 PKC - Protein Kinase C
 CBP - Ca²⁺ Binding Pocket
 mEPSCs – miniature Excitatory Postsynaptic Current
 mIPSCs – miniature Inhibitory Postsynaptic Current
 ITC - Isothermal Titration Calorimetry
 EC₅₀ – Half maximal activity
 PC - phosphatidylcholine
 PE - phosphatidylethanolamine
 PS - phosphatidylserine
 PI – phosphatidylinositol
 PIP₂ - Phosphatidylinositol(4,5)-biphosphate
 PLC - phospholipase C
 CICR - Ca²⁺-induced Ca²⁺ release
 IP₃ - inositol(1,4,5)-trisphosphate
 IP₃Rs - Inositol triphosphate receptors
 DAG - diacylglycerol
 RyRs - ryanodine receptors
 BAPTA - 1,2-bis(o-aminophenoxy)ethane-N,N,N',N'-tetraacetic acid
 OGB-1 - Oregon Green 488 BAPTA-1
 AM (from AM esters) - acetoxymethyl
 GECIs – Genetically encoded Ca²⁺-indicators
 CaM – Calmodulin
 CaMKII - Calmodulin-dependent Kinase II
 LTP - Long-Perm Potentiation
 PSD – PostSynaptic Density
 STP - Short-Term Plasticity
 STD - Short-Term Depression
 STP - Short-Term Potentiation
 PTP - Post-Tetanic Potentiation
 HFS - High Frequency Stimulation
 AC - Adenylyl Cyclase
 SCTs - Spontaneous Ca²⁺ Transients

EM-CCD - Electron multiplying CCD (carbonate compensation depth)
ROI – Region of Interest
SICTs (analysis) – Semi-automated independent Ca²⁺ transients (analysis)
HBSS - Hank's balanced salt solution
DIV – Day in vitro
FAINT - Flash activation of Action potential-Independent NeuroTransmission
ACSF - artificial cerebrospinal fluid
TTX – Tetrodotoxin
SNR - Signal-to-noise ratio
EPP - endplate potential
NCX - Na⁺/Ca²⁺ exchanger
GPCR - G-protein coupled receptors
PLC – Phospholipase C
PKC – Protein kinase C
CaSR - Ca²⁺-sensing receptor
SCEs - Spontaneous Ca²⁺ events
ECTs - evoked Ca²⁺ transients
MID - Munc13 interacting domain
GST - glutathione-S-transferase
MAP-2 - microtubule associated protein 2
(D/T/Q)KO- (double/triple/quadruple) knock-out
SKO – quintuple knock-out
PPR - paired-pulse ratio
RRP - ready-releasable-pool
CLM – Ca²⁺-ligand mutation/mutant
Rph3A - Rabphilin3a
RBD - Rab3a binding domain
GSIS - Glucose-stimulated-insulin-secretion
DCVs - dense core vesicles
CTLs - cytotoxic CD8⁺ T cells
Gz - Gabazine
Cpne6 - Copine6
PCR - Polymerase Chain Reaction
Rs - series resistance
sypHy –Synaptophysin-pHluorin
[Ca²⁺]_{nuc} - nuclear [Ca²⁺]
KD - knock-down
ATP - Adenosine triphosphate
Cdk5 - Cyclin-dependent kinase 5
EGTA - Ethylene glycol-bis(β-aminoethyl ether)-N,N,N',N'-tetraacetic acid
ER - Endoplasmic reticulum
mGluR - Metabotropic glutamate receptors;
NMJ - Neuromuscular junction
PKA - cAMP-dependent protein kinase
PMCA - PM Ca²⁺-ATPase

