

7 ANHANG

7.1 ABBREVIATIONS

2-APB	2-aminoethoxydiphenylborane
ACh	acetylcholine
ACSF	Artificial Cerebrospinal Fluid
ADPR cyclase	ADP ribose cyclase
AM	acetoxymethylester
AMPA	α -Amino-3-hydroxy-5-methyl-4-isoxazolpropionic acid
AMPA	α -Amino-3-hydroxy-5-methyl-4-isoxazolpropionic acid receptor
ADP	adenosine 5'-diphosphate
ATP	adenosine 5'-triphosphate
BME	Basal Medium Eagle
BSA	bovine serum albumine
$^{\circ}\text{C}$	degree Celsius
Ca^{2+}	calcium ion
$[\text{Ca}^{2+}]_i$	intracellular calcium ion concentration
CCD	charge coupled device
CICR	Ca^{2+} -induced Ca^{2+} release
Cl	chloride ions
CO_2	carbon dioxide
CRAC	calcium release-activated channel / calcium release-activated current
CAM	calmodulin
CaMK	calmodulin dependent kinase
cAMP	3',5'-cyclic adenosine monophosphate (3',5'-cyclic AMP)
cGMP	3',5'-cyclic guanosine monophosphate (3',5'-cyclic GMP)
CCE	capacitative calcium entry
CGS-15943	9-chloro-2-(2-furanyl)-[1,2,4]triazolo[1,5-c]quinazolin-5-amine
CNS	central nervous system

Cx	connexin
ddH ₂ O	double distilled water
DAG	diacyl glycerol
DMEM	Dulbecco's modified Eagle Medium
DMSO	dimethylsulfoxide
EAAAs	excitatory amino acids
EGTA	ethylene glycol-bis(β-aminoethylether)-N,N,N',N'-Tetraacetic acid
EPSC	excitatory postsynaptic current
ER	endoplasmatic reticulum
F	fluorescence intensity
F ₀	fluorescence intensity at the beginning of an experiment
FCS	fetal calf serum
GABA	γ-aminobutyric acid
(s)GC	(soluble) guanylate cyclase
GFAP	glial fibrillary acidic protein
GFP	green fluorescent protein
GPN	glycyl-L-phenylalanine 2-naphthylamide
GS	glutamine synthetase
H ⁺	hydrogen ions
HBSS	Hank's balanced salt solution
HEPES	N-(2-hydroxyethyl)piperazine-N'-(2-ethanesulfonic acid)
Hz	Hertz
ILB4	isolectin B4
IP ₃	inositol-1,4,5-trisphosphate
IP ₃ R	inositol-1,4,5-trisphosphate receptor
IPSC	inhibitory postsynaptic current
K ⁺	potassium ions
[K ⁺] _o	extracellular potassium ion concentration
L-NNA	N _ω -nitro-L-arginine
LTD	long term depression
LTP	long term potentiation
M	molar
MCPG	(S)-α-methyl-4-carboxyphenylglycine

mR	metabotropic receptor
mGluR	metabotropic glutamate receptor
min	minute
MLCK	myosin light chain kinase
NAAD	nicotinic acid adenine dinucleotide
NAADP ⁺	nicotinic acid adenine dinucleotide phosphate
NAADP ⁺ R	nicotinic acid adenine dinucleotide phosphate
Na ⁺	sodium ions
NAD ⁺	nicotinamid adenine dinucleotide
NADP ⁺	nicotinamid adenine dinucleotide phosphate
NMDA	N-methyl-d-aspartate
NMDAR	N-methyl-d-aspartate receptor
NMRI	naval medical research institute
NO	nitric oxide
(e, i, n)NOS	(endothelial, inducible, neuronal) nitric oxide synthase
O ₂	oxygen
O ₂ ⁻	superoxide
ONOO ⁻	peroxynitrate
PIR	P1 receptor
PA	paraformaldehyde
PB	phosphate buffer
PDE	phosphodiesterase
PIP ₂	phosphatidylinositol-4,5-bisphosphate
PK(A, C, G)	protein kinase (A, C, G)
PL(A, C, D)	phospholipase (A, C, D)
PLL	poly-L-lysine
PMCA	plasma membrane Ca ²⁺ ATPase
PTP	permeability transition pore
PYK2	proline-rich kinase 2
RB	reactive blue
ROCC	receptor-operated (ligand-gated) Ca ²⁺ channel
ROI/ROS	reactive oxygen intermediate/species
RT	room temperature

RTK	receptor tyrosine kinase
RVD	regulatory volume decrease
RYR	ryanodine receptor
s	second
SIP	sphingosine 1-phosphate
SACC	stretch-activated Ca ²⁺ channel
SCaMPER	sphingolipid Ca ²⁺ release-mediating protein of the ER
S-DHPG	(S)-3,5-dihydroxyphenylglycine
SERCA	sarco-endoplasmatic reticulum Ca ²⁺ ATPase
SIC	slow inward current
SNOG	(S)-nitrosoglutathione
SOCC	store-operated Ca ²⁺ channel
t-ACPD	trans-(1S,3R)-1-amino-1,3-cyclopentanedicarboxylic acid
TBS	Tris-buffered saline
TnC	troponin C
TTX	tetrodotoxin
TX100	Triton X-100
VGCC	voltage-gated Ca ²⁺ channel
VRAC	volume-regulated anion channel

7.3 Publikationen

7.3.1 Paper

NAADP⁺ induces Ca²⁺ signaling in astrocytes *in situ*

Antje Heidemann, Carola G. Schipke and Helmut Kettenmann

J Biol Chem. 2005 Oct 21;280(42):35630-40

7.3.2 Posterbeiträge

Spontaneous [Ca²⁺]_i-oscillations in astrocytes – A role for NAADP⁺?

A. Heidemann, C. Schipke, O. Peters, H. Kettenmann

- MDC and FMP 4th Graduate Student Retreat on Neurodegenerative Diseases (Wulkow, September 2002)
- Berichtskolloquium des Sonderforschungsbereichs 515 “Mechanismen entwicklungs- und erfahrungsabhängiger Plastizität des Nervensystems” (Berlin, Februar 2003)

Control of Ca²⁺ oscillations in astrocytes *in situ*

A. Heidemann, C. Schipke, O. Peters, H. Kettenmann

- Internationales Symposium des GRK 238: Next Neuroscience Generation: Relevance of Cell Death in Development and Disease of the Brain (Berlin, Februar 2003)
- Internationales Symposium der Finnischen Graduate School of Neuroscience: Neuroimaging: What are we really looking at? (Helsinki, April 2003)
- 5th meeting of the German Neuroscience Society (Göttingen, Juni 2003)
- VI European Meeting on Glial Cell Function in Health and Disease (Berlin, September 2003)

NAADP⁺-induced Ca²⁺ signalling in astrocytes

A. Heidemann, C. G. Schipke, O. H. Peters, H. Kettenmann

- MDC-Neuro-Meeting (Chorin, Oktober/November 2003)
- Society for Neuroscience (SfN), 33rd annual meeting (New Orleans, November 2003)
- Berichtskolloquium des Sonderforschungsbereichs 515 “Mechanismen entwicklungs- und erfahrungsabhängiger Plastizität des Nervensystems ” (Berlin, November 2003)

Mechanism of NAADP⁺-induced Ca²⁺ signalling in astrocytes *in situ*

A. C. Heidemann, C. G. Schipke, H. Kettenmann

- Berlin Neuroscience Forum 2004 (Liebenwalde, April 2004)
- 4th Forum of European Neuroscience (Fens, Lissabon, Juli 2004)

Nitric oxide triggers repetitive Ca²⁺ transients in astrocytes in mouse cortical slices

A. Heidemann, C. G. Schipke, O. H. Peters, H. Kettenmann

- Society for Neuroscience (SfN), 34th annual meeting (San Diego, Oktober 2004)
- Abschluss Symposium des GRK 238 "Schadensmechanismen im Nervensystem: Einsatz von bildgebenden Verfahren" (Berlin, November 2004)

7.3.3 weitere besuchte Konferenzen/Symposien/Workshops

- Workshop: Bewusstsein - Forschungsansätze im interdisziplinären Dialog (Magdeburg, September 2002)
- Internationales Symposium: Molecular Biosensors in Neuroscience (Berlin, November 2002)
- Internationales Symposium: Cardiovascular and Neuronal Basis of Stroke (Berlin, Oktober 2004)
- Internationales Symposium: Brain Tumor (Berlin, Dezember 2004)
- Methodenkurs des Graduiertenkollegs 238: "Schadensmechanismen im Nervensystem: Einsatz von bildgebenden Verfahren": "Applications of Imaging and Patch clamp in cellular neuroscience" (Berlin, März 2003 und März 2004)
- Berichtskolloquium des Sonderforschungsbereichs 515 "Mechanismen entwicklungs- und erfahrungsabhängiger Plastizität des Nervensystems" (Berlin, November 2004)
- Helmholtz Gemeinschaft der deutschen Forschungszentren eV. (HGF) Neurometing (Berlin, 2004)
- MDC-Neuro-Retreat (Döllnsee, Oktober 2005)

7.4 Erklärung

Hiermit versichere ich, daß ich die vorliegende Arbeit selbständig und nur unter Verwendung der angegebenen Verfahren, Hilfsmittel und Literatur angefertigt habe.

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