Appendices

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List of abbreviations

AC	adenylate cyclase
AMP	adenosine mono phosphate
ANGII	angiotensin II
AP	action potential
AT1	angiotensin receptor type 1
ATP	adenosine triphosphate
AV node	atrioventricular node
βMHC	β-myosin heavy chains
$[Ca^{2+}]_i$	intracellular calcium concentration
cAMP	cyclic AMP
CFS	calcium-free solution
CICR	Ca^{2+}-induced Ca^{2+} release
DAG	di-acyl-glycerol
DHPR	dihydropyridine receptors
DIV	day *in vitro*
DMSO	di-methyl sulfoxide
ECC	excitation-contraction coupling
ECM	extracellular matrix
EL	elongated cells
E_m	membrane potential
ER	endoplasmic reticulum
ES	extracellular solution
ET-1	endothelin-1
ET_A	endothelin receptor type A
ET_B	endothelin receptor type B
F	fluorescence intensity
F_0	basal fluorescence intensity
FCS	fetal calf serum
FDHM	Full Duration at Half Maximum
Fig.	figure
FWHM	Full Width at Half Maximum
G_i	protein G (GTPase activity) type i (inhibitory)

G_q	protein G (GTPase activity) type q (coupled to PLC pathways)
G_s	protein G (GTPase activity) type s (coupled to AC pathways)
HCS solution	high-calcium solution
$InsP_3$	inositol 1,4,5-trisphosphate
$InsP_3R$	inositol 1,4,5-trisphosphate receptor
i.p.	intraperitoneal injection
ITS	insulin-transferrin-selenium mixture
K_d	dissociation constant
LCC	L-type Ca^{2+} channel
LCS	low-calcium solution
M	mol/L
MAPK	mitogen-activated protein kinase
min	minute
ms	millisecond
n	sample size
NCX	Na^+/Ca^{2+} exchanger
NP	non pulsed cells
P cells	pulsed cells
“p” value	probability value. This number is a quantitative estimate of the likelihood that the observed difference between two groups could have happened by chance alone.
PE	phenylephrine
PIP2	phosphoinositol-4,5-biphosphate
PKA	protein kinase type A
PKC	protein kinase type C
PLC	phospholipase C
PMCA	plasma membrane Ca^{2+} ATPase
R	number of cells on ECM over number of cells on poly-L-lysine after the isolation, plating and the first wash on DIV0
RO	round cells
RyR	ryanodine receptor
s	second
SA node	sinoatrial node
SD	standard deviation

SEM	standard error of the mean
SERCA	sarcoplasmic/endoplasmic reticulum - Ca^{2+} ATPase
“SMS” filtering	“1 smooth, 1 median, 1 smooth” filtering
SR	sarcoplasmic reticulum
TATS	transverse-axial tubular system
TM	transmembrane
T_{ss}/T_1	ratio of the twitch amplitude under steady-state conditions (last 5 peaks; T_{ss}) by the initial contraction amplitude (T_1)
T-tubule system	transverse tubule system

Publication

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PRE-DOCTORAL EXPERIENCE

June 2002 - July 2002 (Montpellier-France)

Under-graduate training course, Laboratory of Brain Plasticity, UMR 5102 CNRS-University of Montpellier II. ***Project:*** Training in electrophysiology (Whole-Cell Patch-Clamp). Supervisor: Dr. M. Vignes.

March 2003 - April 2003 (Montpellier-France)

Post-graduate training course, Laboratory of Brain Plasticity, UMR 5102 CNRS-University of Montpellier II. ***Project:*** "Role of MAPkinases in the synaptic plasticity induced by the blockade of the glutamate transporters in fetal rat hippocampal neurons" (Biochemistry: Western Blot, Immunocytochemistry and Electrophysiology methods). Supervisor: Dr. M. Vignes.

September 2003 - July 2004 (Montpellier-France)

Pre-doctoral training course, Department of Neurobiology, INSERM-U583, University of Montpellier II. ***Project:*** "Effect of neurosteroids on embryonic mouse DRG neurons: role for intracellular calcium" (Well trained in cell culture: embryonic, neonatal and adult DRGs, in intracellular calcium measurements: Fura-2 and Fluo-3 techniques – Fast fluorescence photometry – Imaging system, and in molecular biology: RT-PCR). Supervisor: Dr. G. Dayanithi.

Well experienced in most of the computer programmes and softwares.

DOCTORAL EXPERIENCE

September 2004 – October 2007 (Homburg (Saar)-Germany)

PhD thesis, Institute for Molecular Cell Biology, Medical Faculty, Saarland University, Homburg (Saar). ***Project:*** “Characterisation of a single cell model for adult cardiac myocytes” (Setting-up of a long-term culture for rat adult cardiomyocytes, very familiar with a device to pace a population of cardiac cells, mouse cardiac cells culturing, cell/sarcomere length measurements, viral gene transfer, real time quantitative PCR, calcium imaging, realtime confocal microscopy). Supervisor: Prof. Dr. P. Lipp.

Routinely working with the softwares Canvas, Igor, Sigma plot, ImageJ.

Lecture "Hormones and signal transduction" (in German) for the medical students of the first semester at the Medical Faculty, Saarland University.

Co-reviewer occasional for: European Journal of Pharmacology, Neuropharmacology and Journal of Neuroendocrinology.

Attendance to the 1st international workshop "Acute Heart Slices" – A new model in drug screening, safety pharmacology and basic heart research (May 29 and 30, 2007 – Dresden, Germany).

POSTERS

- 84th Annual Meeting of the German Society of Physiology (Goettingen, 2004). Poster presentation (in English):
"Minimising dedifferentiation in long-term primary culture of rat cardiac myocytes" **C. Viero**, L. Kaestner, A. Vecerdea, P. Lipp; P22-14.
- "Visualisation of subcellular compartments in adult rat cardiac myocytes after adenoviral gene transfer" S. Ruppenthal, L. Kaestner, **C. Viero**, A. Vecerdea and P. Lipp; P12-9.

- 51st annual meeting of the Biophysical Society (Baltimore, 2007)
"A primary culture system for sustained expression of calcium sensors and chronic electrical stimulation in adult rat ventricular myocytes" P. Lipp, **C. Viero**, U. Kraushaar, S. Ruppenthal, L. Kaestner; 2952-Pos, 6A Cardiac Muscle II, Session 135.21.

- 86th Annual Meeting of the German Society of Physiology (Hannover, 2007).
"Long-term expression of a Ca^{2+} sensor protein in cultured adult rat cardiac myocytes" **C. Viero**, U. Kraushaar, S. Ruppenthal, L. Kaestner, P. Lipp; P02-L1-14.

- Life Sciences 2007: joint meeting of the Biochemical Society, the British Pharmacological Society and The Physiological Society (Glasgow).
"Chronic neuroendocrine stimulation induces Ca^{2+} homeostasis adaptation in long-lasting cultured adult heart cells" **C. Viero**, P. Lipp; PC327.

ORAL COMMUNICATIONS

- Colloquium of the Graduate School "Cellular Regulation and Growth" (Homburg, 2005).
"Characterisation of a single cell model for adult cardiac myocytes". **C. Viero** (in English).

- 85th Annual Meeting of the German Society of Physiology joint to the Federation of European Physiological Societies (Munich, 2006).
"Insights into long-term adult cardiac myocytes culture" **C. Viero**, U. Kraushaar, L. Kaestner, P. Lipp; OW3-16. (in English).

- 86th Annual Meeting of the German Society of Physiology (Hannover, 2007).
"Effect of chronic Gq-coupled stimulation and Ca^{2+} handling in long-lasting cultured adult cardiac myocytes" **C. Viero**, P. Lipp; O09-5. (in English).

ABSTRACTS

G. Dayanithi, **C. Viero**, I. Mechaly, J. Valmier (2004) Rapid inhibition of calcium influx by progesterone and allopregnanolone in murine embryonic sensory neurons. Society for Neuroscience; San Diego. *Soc Neurosci. Abs.* 24: 615.4.

- **C. Viero**, L. Kaestner, A. Vecerdea, P. Lipp (2005) Minimising dedifferentiation in long-term primary culture of rat cardiac myocytes. European Journal of Physiology (Pflügers Archiv); Volume 449, Supplement 1, S139, Abs. P22-14.

- L. Kaestner, U. Kraushaar, **C. Viero**, A. Vecerdea, P. Lipp (2005) The arrhythmogenic potential of phospholipase C in rat ventricular myocytes. European Journal of Physiology (Pflügers Archiv); Volume 449, Supplement 1, S103, Abs. P12-8.

- **C. Viero**, U. Kraushaar, L. Kaestner, P. Lipp (2006) Insights into long-term adult cardiac myocytes culture. Acta Physiologica; Volume 186 Supplement 1, P.104, Abs. OW3-16.

- P. Lipp, **C. Viero**, U. Kraushaar, S. Ruppenthal, L. Kaestner (2007) A primary culture system for sustained expression of calcium sensors and chronic electrical stimulation in adult rat ventricular myocytes. Biophysical Journal; Abstracts Issue (Supplement), P. 619a, 2952-Pos.

- **C. Viero**, U. Kraushaar, S. Ruppenthal, L. Kaestner, P. Lipp (2007) Long-term expression of a Ca^{2+} sensor protein in cultured adult rat cardiac myocytes. Acta Physiologica; Volume 189 Supplement 1, Abs. P02-14.

- **C. Viero**, P. Lipp (2007) Effect of chronic Gq-coupled stimulation and Ca^{2+} handling in long-lasting cultured adult cardiac myocytes. Acta Physiologica; Volume 189 Supplement 1, Abs. O09-5.

- **C. Viero**, P. Lipp (2007) Chronic neuroendocrine stimulation induces Ca^{2+} homeostasis adaptation in long-lasting cultured adult heart cells. Proceedings of the Life Sciences meeting 2007; Abs. PC327.

- **C. Viero**, P. Lipp (2007) Effect of chronic G_q-coupled stimulation on Ca^{2+} handling in long-lasting cultured adult cardiac myocytes. European Society of Cardiology Congress 2007; Abs. 85468.

C. Viero and G. Dayanithi (2007) Neurosteroids are excitatory in supraoptic neurones but inhibitory in the PNS: it's all about oxytocin and progesterone receptors. VIIth World Congress on Neurohypophysial Hormones: Regensburg. *Abstract*.

PAPERS

G. Dayanithi, I. Mechaly, **C. Viero**, H. Aptel, S. Alphandery, S. Puech, F. Bancel, J. Valmier (2006) Intacellular Ca^{2+} regulation in rat motoneurons during development. **Cell Calcium** 39:237-246. **Impact factor: 4,118.**

C. Viero, I. Mechaly, H. Aptel, S. Puech, J. Valmier, F. Bancel, G. Dayanithi (2006) Rapid inhibition of Ca^{2+} influx by neurosteroids in murine embryonic sensory neurones. **Cell Calcium** 40:383-391. **Impact factor: 4,118.**

➢ **C. Viero**, U. Kraushaar, S. Ruppenthal, L. Kaestner, P. Lipp (2007) A primary culture system for sustained expression of a calcium sensor in preserved adult rat ventricular myocytes. **Cell Calcium** (*In press*). **Impact factor: 4,118.**

C. Viero and G. Dayanithi (2007) Neurosteroids are excitatory in supraoptic neurones but inhibitory in the PNS: it's all about oxytocin and progesterone receptors. **Progress in Brain Research**. *Review* (*In press*). **Impact factor: 3,357.**

M. Chen-Kuo-Chang, G. Dayanithi, **C. Viero**, C. Hamel, A. Muller and G. Lenaers (2007) OPA1 and mitochondrial involvement in calcium clearance of mouse retinal ganglion cells. *In preparation*.

G. Dayanithi, I. Richard, **C. Viero**, E. Mazuc, N. Bourg, M. Herasse, I. Marty, G. Lefranc, P. Mangeat and S. Baghdiguian (2007) Intracellular $[Ca^{2+}]_i$ regulation in skeletal muscle cells from normal and *capn*3-deficient mice. *In preparation*.

➢ **C. Viero**, A. Scholz, S. Ruppenthal, P. Lipp (2008) Chronic G_q-coupled receptor stimulation induces Ca^{2+} homeostasis adaptation in long-lasting cultured adult rat ventricular myocytes. *In preparation*.

Publications related to my PhD thesis are marked with an arrowhead.

PROFESSIONAL EXPERIENCE

July 1999 - September 1999 (Carcassonne-France)

Technical Assistant for the patients at the hospital – Carcassonne.

August 2003 (Carcassonne-France)

Technical Assistant in a Medical Analysis Laboratory in the Montreal Clinical Center, Carcassonne-France.

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