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DATE OF BIRTH: January 23rd, 1958, Koper

MARITAL STATUS: Married (Prof. Dr. Hojka Kraigher), two sons (Tomaž M.,  
\*1989), Matevž B., \*1995)

CITIZENSHIP: Slovenian

## EDUCATION

09/76-05/81 B.Sc. in Animal Physiology at the Biotechnical Faculty, University  
of Ljubljana: average score 9.8 out of 10.0.  
09/81-05/83 M.Sc. in Neurophysiology Medical School & Biotechnical Faculty,  
University of Ljubljana: Classical electrophysiology on frog  
neuromuscular junction.  
10/83-12/86 Ph.D. in Neurophysiology, University of Ljubljana, Medical School:  
Biophysical study of single channel conductance properties of  
GABA and glycine activated chloride channels.

## RESEARCH EXPERIENCE:

10/83-04/85: Department of Physiological Sciences, Newcastle Medical School  
and at the MRC Neuroendocrinology Unit in Newcastle upon  
Tyne ,U.K. In Dr. R.N.McBurney's laboratory employing the patch-  
clamp techniques to study electrophysiological properties of rat  
spinal neurones grown in cell culture. Supported by The British  
Council and The Wellcome Trust.  
05/85 –10/87 Introducing the "patch-clamp" method into the laboratory in  
Ljubljana. As it was not possible for us to purchase foreign  
equipment at that time, we developed our own apparatus. An in-  
built phase-lock-in amplifier was designed for high resolution  
capacitance measurements to monitor processes such as endo-  
and exocytosis in real time.

- 10/87-10/88 Visiting scientists, A.F.R.C. Institute of Animal Physiology, Cambridge, U.K. Wellcome Trust Fellow in Dr.W.T. Mason's laboratory implementing home-made patch-clamp amplifier to measure capacitance changes in anterior pituitary cells. In Prof. M.Berridge's laboratory at the Cambridge University I worked on  $[Ca^{2+}]_i$  homeostasis in bovine lactotrophs using the fura-2 imaging approach.
- 09/89-10/89 Research Council of Slovenia Studenship: A.R.F.C. Institute of Animal Physiology and Genetics Research, Dept. of Neuroendocrinology, Cambridge, U.K.
- 10/90-11/90 Nuffield Foundation Scholarship: A.F.R.C. Institute of Animal Physiology and Genetics Research, Dept. of Neuroendocrinology, Cambridge, Anglija
- 02/91-04/91 Department of Botany, University of Adelaide, Adelaide, S. Australija. Invitation to conduct capacitance measurements on plant secretory cells.
- 1991- present Head Laboratory of Experimental Neuroendocrinology-Center Molecular Cell Physiology. Investigating stimulus-secretion coupling in rat pars intermedia cells, plant aleurone protoplasts, maize coleoptile protoplasts, hepatocytes, astrocytes, photoreceptors, chondrocytes, adipocytes and other cells.
- 06/00-12/00 On sabbatical at the Dept. of Physiology and Biophysics, University of Colorado Health Sciences Center, Denver, US with Prof. Bill Betz, sponsored by a Fulbright Scholarship.
- 03/00- present Establishment of applied biomedical research for Cell Engineering Laboratory at the spin-off Company Celica, Biomedical Center, d.o.o., Proletarska cesta 4 , 1000 Ljubljana; [www.celica.si](http://www.celica.si). Since June 2006, Managing Director.

## POSITIONS HELD

Since November 1981 employed at the Medical Faculty of Ljubljana, since November 1983 holding a Teaching position. Since 1991 Head Laboratory of Experimental Neuroendocrinology-Center Molecular Cell Physiology at the Medical Faculty. Within this laboratory since 1998 Head of Carl Zeiss Reference Center for Confocal Microscopy. Since May 2001 Programme Director at Celica Biomedical Center. Since July 2006 CEO at Celica Biomedical Center.

## HABILITATIONS (all at the University of Ljubljana)

- 09/81 – 11/83 Research Student  
 06/84 – 06/89 Assistant  
 06/89 - 10/92 Assistant Professor  
 10/92 - 06/95 Associate Professor  
 06/95 – Professor of Pathological Physiology

## TEACHING EXPERIENCE

### Undergraduate students

- 10/86 –present Practical courses and Lectures in Pathophysiology for Medical, Dental and Pharmacy students
- 10/95- present Lectures in Physiology and Pathophysiology for Nursing and Physiotherapy students
- 01/01- present Full Course in General Physiology for Biochemists, Faculty of Chemistry and Chemical Technology, University of Ljubljana

### Postgraduate students:

- 10/91 – present Medical Faculty: Neurophysiology
- 10/94 - present Medical Faculty: Cell Physiology, Methods in Biomedical Sciences (Course in Electrophysiology, Fluorescence Measurements of Ions, Confocal Microscopy)
- 10/91-present Biotechnical Faculty: Electrophysiological methods, Methods to Examine Single Cell Function, Neurophysiology, Medical Biotechnology),
- 05/92-06/92 Course in Electrobiolgy, Department of Physiology, University of Trieste, Italy
- 09/88-present supervisor to 5 B.Sc. student research projects
- 09/90- present supervisor to 7 M.Sc and 7 Ph.D students
- 07/94 EMBO course at BBRC, Cambridge, U.K. Capacitance measurements
- 09/99 Course in Capacitance measurements for the Italian Physiological Society held in Ljubljana

## OTHER PROFESSIONAL EXPERIENCE

- 02/93 - 05/96 Chairman of the Slovenian Physiological Society
- 10/95-10/97 Chairman of the Committee for Scientific and Research Work, Medical Faculty, University of Ljubljana.
- 09/95-present Member of the Committee for Scientific and Research Work of the University of Ljubljana
- 05/93 Co-chairman International Meeting »Toxins and Exocytosis« held at Gozd Martuljek, Slovenia. Sponsored by the New York Academy of Sciences, USA.
- 09/95 Chairman of the Organizing Committee for the International Meeting »Life Sciences« held at Gozd Martuljek, Slovenia
- 06/93, 09/95, 05/99 Chairman bilateral »Young Neuroscientists Meeting« participating Ph D students from the University of Ljubljana, and students from the Scuola Internazionale dei Studi Avanzati, and from the Department of Physiology, University of Trieste, Italy. All meetings held in Slovenia.
- 10/92- present Reviewer for projects applied to the Ministry of Sciences and Technology of Slovenia, NATO Research Programme, Norwegian Research Council, European Research Directorate,

	Human Science Frontier Programme. Reviewer for J. of Physiol., J. Neurosci., Biophys. J., Eur. J. of Neurosci., Eur. J. Physiol. and others.
04/01-08/02	Chairman of The Natural History Society of Slovenia (in action since 1839).
02/04- present	Member of the Republic of Slovenia State Committee for Baccalaureate
09/06 present	Chairman of Science Board for Interdisciplinary Research at The Agency for Science R. of Slovenia.
10/08	Nomination for Committee for Advanced Therapies at EMEA (London).

## INVITED LECTURES

05/86	Department of Biology, University of Trieste, Italy “ Chloride channels in spinal chord neurones”
12/86	Institute fuer Hirnforschung, Karl Marx Univesitat, GDR “Patch clamp studies of spinal cord neurones in culture.
04/88	Sandoz Institute for Medical Research, University College London, U.K. “Calcium imaging and capacitance measurements in bovine lactotrophs.
05/89	Dept. of Pharmacology, University of Milano, Italy: “Calcium-induced changes in membrane capacitance in anterior pituitary cells”
08/91	Department of Physiology and Biophysics, Medical School, Univ. of Washington, Seattle, USA, “Capacitance measurements in a plant secretory cell”
03/91	Department of Botany, University of Adelaide, S. Australia “Capacitance measurements: A techniques to measure exocytosis in plant protoplasts”
10/91	Department of Physiology, University of Trieste, Italy “Measurements of secretory activity of single pituitary cells”
11/91	Department of Biophysics, University of Wroclaw, Poland. “Electrophysiological patch-clamp capacitance measurements”
06/92	Department of Physiology, University College London, U.K. “Measurements of exocytosis in single animal and plant secretory cells”
11/92	Mayo Clinic, Rochester, Minnesota, USA “Chloride ions stimulate secretory activity of single rat melanotrophs”
11/92	University of California, Riverside, USA “Chloride ions stimulate secretory activity of single rat melanotrophs”
03/93	CNRS, Paris, France “Role of Rab3B in exocytosis of anterior pituitary cells”
05/93	Institute for Plant Physiology, University of Göttingen, Germany “ Regulated secretion in pituitary cells and plant protoplasts”
09/93	Scuola Internazionale Superiore di Studi Avanzati, UNESCO, Trieste, Italy “A role for GTPases in regulated secretory activity of anterior pituitary cells”

- 07/94 EMBO Course, BBRC Cambridge, U.K. "Membrane capacitance measurements" Lecture and practical course.
- 07/95 Gunma University, Maebashi, Japan "A role of GTPases in regulated exocytosis in pituitary cells"
- 10/95 Ohrbeck, Muenster, Germany "Role for Rab3B in exocytosis of anterior pituitary cells"
- 03/96 University of Colorado, Ft. Collins, Colorado, USA "Molecular mechanisms of regulated exocytosis in pituitary cells"
- 12/96 Indian Institute of Sciences, Bangalore, India "Rab3A but not Rab3B plays a role in regulated exocytosis of rat melanotrophs"
- 12/96 All India Institute of Medical Sciences, New Dehli, India "Rab3A but not Rab3B plays a role in regulated exocytosis of rat melanotrophs"
- 02/97 Dept. of Molecular Physiology, Stanford University, Palo Alto, USA "Molecular mechanisms of regulated exocytosis in pituitary cells"
- 05/98 Department of Physiology, University of Goettingen, Germany "A role of Rab3A and CAPS in regulated secretion in pituitary cells"
- 01/99 Department of Zoology and Genetics, Iowa State University, Ames, USA "Molecular mechanisms of regulated exocytosis in pituitary cells"
- 09/06/00 Cellular and Structural Biology, UCHSC, Medical School, Denver, USA "Distinct molecular mechanisms of regulated exocytosis in rat pituitary cells"
- 08/11/00 Cornell University Biophysics Colloquium Series, Ithaca NY, USA. "Molecular mechanisms of regulated exocytosis in pituitary cells"
- 09/11/00 New Jersey Medical School, Newark, New Jersey, USA: "Distinct molecular mechanisms of regulated exocytosis in rat pituitary cells"
- 29/11/00 Molecular, Cellular and Integrative Neurosciences, University of Colorado, Fort Collins, Colorado, USA: "Distinct molecular mechanisms of regulated exocytosis in rat pituitary cells".
- 27/11/01 European Neuroscience Institute, Goettingen, Germany: "Distinct exocytic modules in neuroendocrine cells"
- 01/12/01 SISSA (Scuola Internazionale dei Studi Avanzati), Trieste, Italy. Invited lecture at the International Meeting: Neurobiology in Eastern and Western Europe. Title: "Molecular Mechanisms Of Regulated Exocytosis In Pituitary Cells"
- 12/11/02 FP6- Launch Conference, Experience in working with SMEs in FP5, Bruxelles, 11.-13. 2002, »Cell Science in Industry in Slovenia«
- 18/12/02 Institute of Physiology, Medical School, University of Innsbruck, Austria »Molecular Mechanisms of Exocytosis« (Prof. P. Dietl)
- 08/05/03 University of Milano, Department of Physiology, Italy (Prof. D. DiFrancesco) »Molecular Mechanisms of Exocytosis«
- 04/09/03 "Euroglia 2003" (VI. European Meeting on Glial Cell Function in Health and Disease, 03.-06. Sept., 2003, Berlin, Germany), Invited lecture »Calcium-dependent exocytosis in astrocytes«, organizer Prof. P.G. Haydon.
- 19/09/03 42nd Annual Meeting of The European Society for Paediatric Endocrinology (17.-20. September, 2003; Ljubljana, Slovenija) Plenary lecture » Molecular Mechanisms of Exocytosis«.

- 08/04/04 »Cell Physiology, Physiomics and Cell Engineering« The Slovenian Academy of Sciences and Arts Lecture Series. Introduced by Dr. Mitja Zupančič.
- 12/10/04 »Molecular Mechanisms of Exocytosis« 22nd International Symposium on Biophysics, Sv. Stefan & Belgrade, 9 – 13 October 2004, invited lecture.
- 14/10/04 »Microscopy, a pace generator in physiology« Workshop and short course in confocal microscopy in biomedicine, 22nd International Symposium of Biophysics Sv. Stefan & Belgrade, 9 – 13 October 2004, invited lecture.
- 17/08/05 »Spontaneous vesicle fusion and vesicle mobility« Special Seminar Physiology and Biophysics seminar series. UCHSC, Department of Physiology and Biophysics, Denver, Colorado.
- 13/03/06 »Post-fusion regulation of peptide release from a single granule« University of Ulm, Department of Physiology, Medical School, Germany.
- 22/12/06 »Membrane Fusion: Basic Science And Biotech Applications, University of Colombo, Institute of Biology, Sri Lanka.
- 07/03/07 »Postfusion vesicle mobility regulation« Biophysicla Society Annual Meeting, Baltimore, USA. Invited Lecture
- 08/03/07 »Fusion-pore properties of peptidergic vesicles«. Invited Lecture at the National Institute of Health, Bethesda, USA
- 10/03/07 »Exocytotic fusion and vesicle mobility in astrocytes« Penn Medical School, Philadelphia, USA.
- 09/07/07 »Fusion-pore properties in resting conditions« Chairman of Symposium Exo-endocytosis. Glasgow Life Sciences 2007. Physiological Society, British Pharmacological Society, Biochemical Society of UK.
- 13/07/07 »Regulated Exocytosis and Vesicle mobility of peptidergic vesicles in astrocytes« Invited Lecture, IBRO World Congress in Neuroscience, Melbourne, Australia.
- 27/03/08 »Mechanisms of ageing: we have 115 years« Invited lecture: Slovenian Physiological Society and Slovenian Pharmaceutical Society, held at the University of Maribor, Slovenia.
- 11/04/08 »Cell Engineering and Anti-Aging« talk at the 2nd International Congress on Anti-aging and Preventive Medicine, April 10-12, 2008, Convention Centre St. Bernardin, Portorož, Slovenia.
- 19/09/08 »Fusion pore: an evolutionary invention by eukaryotic cells« Academia Europaea, University of Liverpool, UK
- 25/09/08 »Fusion pore and hormone discharge from a single vesicle« Institute for Neuroscience, Bordeaux, France. Pens Doctoral Training Progreemme.
- 27/11/2008 »Regulation of hormon discharge form a single peptidergic vesicle«, Institute of Physiology, University of Saarlandes, Homburg, Germany
- 5/12/2008 »Regulated Exocytosis and Vesicle Traffic in Astrocytes«. Inst of Biologie Physico Chimique, Paris, France
- 05/02/2009 »Exocytosis, Fusion Pore Regulation and Hormone Discharge from a Single Vesicle» School of Neuroscience, Indian Institute of Science, Bangalore, India.

- 06/02/2009 »Regulated Exocytosis and Vesicle Traffic in Astrocytes: Communication Integrators in the CNS« School of Neuroscience, Indian Institute of Science, Bangalore, India
- 15/04/2009 »Fusion Pore Regulation and Hormone Discharge from a Single Vesicle» Imperial College London, Korchev Lab, UK.
- 23/04/2009 »Properties of regulated exocytosis in pituitary cells« MRC Laboratory of Molecular Biology, Bazbek Lab, Cambridge UK.
- 19/06/2009 »Vesicle traffic and intermediate filaments in astrocytes» 6TH EUROPEAN CONFERENCE ON INTERMEDIATE FILAMENTS (NANOFILAMENTS) IN HEALTH AND DISEASE at Säröhus, Sweden 18-21, June 2009.
- 07/08/2009 »Trafficking of exocytotic vesicles to and from the fusion site» SYMPOSIUM Exocytotic release of amino acids from astrocytes (v. Parpura) 11th INTERNATIONAL CONGRESS ON AMINO ACIDS, PEPTIDES AND PROTEINS August 3rd to 7th, 2009, Vienna, Austria
- 30/08/2009 »Properties of regulated exocytosis and vesicle traffic in astrocytes« 22nd BIENNIAL MEETING of the ISN - SATELLITE SYMPOSIUM "GLIA AS TRANSMITTER SOURCES AND SENSORS", Shenyang, China, 29.8. - 01.09.2009.
- 23/09/2009 »Properties of regulated exocytosis and vesicle traffic in astrocytes« Edu-GLIA, Kick off Meeting, Centre for Ophthalmology Institute for Ophthalmic Research, Frondsbergstrasse 23, Leipzig, Germany.
- 16/11/2009 »Fusion pore regulation of peptidergic vesicles« Symposium IVb: Exocytosis and fusion pore physiology, FEPS 2209, 12- 15.11.2009. Ljubljana, Slovenia
- 15/12/2009 »Reactive astrocytes, Vesicle traffic and Regulated Exocytosis«, 3rd Mediterranean Conference of Neuroscience, 13 - 16 December 2009 BIBLIOTHECA ALEXANDRINA, Alexandria, Egypt
- 10/03/2010 »Traffic and Regulated Exocytosis of Vesicles in Astrocytes« 41st ASN Meeting »Neuron-Glia Interaction« Santa Fe-New Mexico, USA (March 6th-12th, 2010)
- 12/03/2010 »Exocytosis, Vesicle Discharge and Fusion pore regulation in peptidergic vesicles.« Department of Neurobiology, University of Alabama, Birmingham, Alabama, USA.

## AWARDS

- 02/81 "France Prešeren" Award for Student Research Projects
- 05/91 "B. Kidrič" Award for Scientific achievements
- 11/97 The Republic of Slovenia Prize for Science (Neuroendocrinology)
- 06/01 Associated Member of The Slovenian Academy of Sciences and Arts, Section Natural Sciences.
- 06/07 Member of The Slovenian Academy of Sciences and Arts, Section Natural Sciences.
- 04/07 Member of Academia Europaea, Section Physiology and Medicine

## RESEARCH GRANTS AND INTERNATIONAL COLLABORATION

07/91-07/94 Contract , Minsitry of Sciences (MST)# P3 0155 381	10.681.268 SIT
05/92- 05/93 Contract RR-798/92, Lek Ljubljana	40.000,00 DEM
1992-1993 Contract (MST) #73-6059 (R-R Lek-MF)	3.637.920 SIT
1993 Equipment Grant (MST)	9.459.995 SIT
US Slovenian Cooperation (1995-1998)	60.000 \$
07/94-07/97 Contract (MST)# J3 6207 381	35.265.495 SIT
07/97-07/2000 Contract #J3 8722	
year 1997	7.251.423 SIT
year1998	17.015.566 SIT
year1999	17.015.566 SIT
06/96-06/98 East West Grant Awarded by INSERM, France	200.000 FRF
1998 Equipment Grant (MST)“Confocal Microscope”	33.400.000 SIT
1999-2004 5 year Programe of Molecular Cell Physiology (MST J3 521 381)per annum	28.700.000 SIT
3 off young research studentships	12.500.000 SIT
2001-2004 FIRCA Research collaboration (NIH)	96.000 \$
15/12/01-15/12/04 FrameWork 5 No. QLRT-2000-02004 DECG Dynamics of extracellular glutamate	255.000 Euro
01-01-2003 (30 months) QL1-CT-2001-02233 ammendment #1, GROWBETA EU contribution (50% of total costs of the project)	108.895 Euro
20/09/01-20/09/05 (NIH) University of Colorado, USA Capacitance and fluorecence measurements of unitary exocytic events (per annum)	400.000 \$
2004-2008 5 year Programe in Cell Physiology and Engineering (MST P3 310 381 awarded through the University of Ljubljana and Celica BMSC) per annum	340.000 EUR
2009-2014 Programme Cell Physiology (Research Agency of Slovenia) Per annum	510.000 EUR
2009-2011 Edu-Glia) EU FP 7 project: Per annum	30.000 EUR
2010-2013 Fusion pore properties Per annum	100.00 EUR

Since 1990 M.Sc and Ph.D Fellowships awarded to the following students in the laboratory: G.Zupančič, M.Rupnik, L.Kocmur, M. Kreft, H.Chowdhury, V.Kuster, S. Sedej, M. Potokar, M. Gabrijel, T. Pangršič, M. Gabrijel, J. Jorgačevski, M. Prebil, P.B. Kovačič. At present we have the following Research Associates in the lab: Dr. Matjaž Stenovec, Dr. Nina Vardjan, Dr. Helena H. Chowdhury, Dr. Maja Potokar, Dr. Mateja Gabrijel and Dr. Marko Kreft. Dr. Marjan Rupnik, a former Research Associate, became the Head of his own laboratory at the European Neuroscience Institute, Goettingen, Germany, and has recently taken a Professorship at the University of Maribor, Institute of Physiology.



#### Formal International Collaboration:

- ALIS LINK 257 (1991-1994) The British Council sponsored collaboration with Dr. W.T.Mason, Cambridge, U.K.
- US Slovenian Cooperation (1995-1998) with the laboratory of Professor T. F. J. Martin (Madison, Wisconsin, ZDA).
- PROTEUS (bilateral co-operation between French and Slovenian governments) 1995 and 1996 collaboration with Dr. F. Darchen (Institute Pasteur, Paris, France).
- INSERM grant (1996-1998) collaboration with Dr. M. F. Bader (Strasbourg, France)
- EU cooperation grant COST B5 (1996-1999) Non-insulin dependent diabetes
- Slovenian-Italian co-operation (1997) Zorec-Meldolesi-DIBIT-Milano, Italy
- PROTEUS (1999-2000) bilateral co-operation between French and Slovenian governments Zorec-Bader (Strasbourg)
- FIRCA NIH GRANT with Prof. P. Haydon (2000-2003)
- Fulbright Fellowship (June-Dec 2000), c/o Dr. W.J. Betz, UCHSC, Denver Colorado, USA.
- EC GrowBeta (2003-2004) Physiology of adipocytes
- EC DECG (2001-2004) Extracellular glutamate
- NIH 2001 2005 Optical and electrophysiological measurements of unitary exocytic events
- EU cooperation grant COST B17 (2000-2006) Non-insulin dependent diabetes  
Bilateral US-Slovenian project 2006-2007 with Dr. Sue Kinnamon on taste cells.  
Bilateral Slovenian –Portuguese 2006 2007: Collaboration with Dr. P. Goncalves on membrane domains and exocytosis.  
Edu-Glia FP7 network grant (2009-2011, 40.000 PhD Studentship per year)
- Equipment Grant (2009) High Resolution nonlinear optical microscopy 1,200.000 EUR.

#### MEMBERSHIP OF LEARNED SOCIETIES

1989-	International Brain Research Organisation,
1986-	Biophysical Society of Slovenia,
1987-	Physiological Society of Slovenia
1991-	Brain Research Association
1992-	Physiological Society of Great Britain
1993-	Biophysical Society (USA)
2002-	Society for Neuroscience (USA)

#### RESEARCH INTERESTS (Molecular Physiology - Physiomics, Therapeutic Biotechnology)

Understanding the molecular mechanisms of regulated exocytosis is the focus of our research. Exocytosis involves export of synthesised and stored molecules in membrane bound subcellular organelles termed vesicles. The content of vesicles is released into the extracellular medium through a pore that forms after the vesicle

membrane fuses with the plasma membrane. Although exocytosis is a process ubiquitous to all eukaryotic cells, we know surprisingly little of how it is controlled at elementary level under physiological and pathological conditions. Moreover, we can anticipate that by understanding this mechanism, we would be able to understand a number of diseases and clinically relevant conditions ranging from neurological disorders (i.e. repair after ischaemic stroke, epilepsy), endocrinological disorders (i.e. various forms of diabetes, obesity), response to stress, reconstruction of cartilage and other tissues, the production of hybrid cells to be used for immunotherapy and others. Therefore, the aim is to elucidate the molecular mechanisms of regulated exocytosis in a variety of cell types (plant cells, liver cells, pituitary cells) and are currently studying also glial cells, articular chondrocytes, photoreceptor neurons, white adipocytes, skeletal muscle and others. To study these cells a number of research methods have been introduced, ranging from cell physiology, biophysics, molecular biology, biochemistry, optophysiology, biophysical modelling, electron microscopy, confocal microscopy and others. Some of the specific scientific questions addressed are highlighted in the titles of published papers (see below). Some of the inventions are being commercialized.

A major recent interest is also an attempt to transfer fundamental knowledge into applications: therapeutic biotechnology. Hence we are studying mechanisms of cell fusion employing electric fields, all to generate immunohybridomas essential elements of cell vaccines to treat cancer. Furthermore, we are employing osteogenic cells and fibroblasts to generate autologous cell products for tissue augmentation.

## PUBLICATIONS

(documents written in Slovenian language and abstracts were not included). Note that the whole bibliography can be accessed on the web site: <http://sicris.izum.si/>

1. Kordaš M and Zorec R (1984) The voltage and temperature dependence of the end-plate current in frog skeletal muscle. *Pflügers Arch* 401: 408-413.
2. Henigman F, Kordaš M and Zorec R (1987) An inexpensive head stage for the "patch-clamp" apparatus. *J Physiol* 391: 11P.
3. Hughes D, McBurney RN, Smith SM and Zorec R (1987) Caesium ions activate chloride channels in rat cultured spinal cord neurones. *J Physiol* 392: 231-251.
4. Mason WT, Rawlings SR, Cobbett P, Sikdar SK, Zorec R, Akerman SN, Benham CD, Berridge MJ, Cheek T and Moreton RB (1988) Control of secretion in anterior pituitary cells -Linking ion channels, messengers and exocytosis. *J Exp Biol* 139: 287-316.
5. Kordaš M, Melik Ž, Peterec D and Zorec R (1989) The voltage-clamp apparatus assisted by a "current-pump". *J Neurosci Methods* 26: 229-232.
6. Mason WT, Sikdar SK, Zorec R, Akerman SN, Rawlings SR, Cheek T, Moreton RB and Berridge MJ (1989) Ion channels, intracellular calcium and exocytosis: Control of hormone secretion in cultured bovine pituitary lactotrophs. *In: Secretion and its control*. Ch. 14. pp 226-238. The Rockefeller Press.
7. Sikdar SK, Zorec R, Brown D and Mason WT (1989) Dual effects of G-protein activation on Ca-dependent exocytosis in bovine lactotrophs. *FEBS Letts* 253: 88-92.
8. Smith SM, Zorec R and McBurney RN (1989) On the conductance states activated by glycine and GABA in rat cultured spinal neurones. *J Membr Biol* 108: 45-52.
9. Mason WT, Hoyland J, Kato M, Akerman SN, Bunting R and Zorec R. (1990) Dynamic video imaging of intracellular calcium and exocytosis in anterior pituitary cells secreting prolactin and growth hormone. *Trans. Roy. Microscopical Soc., Chapter 13*, pp. 471-474, IOP Publishing Ltd.
10. Sikdar SK, Zorec R and Mason WT (1990) cAMP directly facilitates Ca-induced exocytosis in bovine lactotrophs. *FEBS Letts* 273: 150-154.
11. Zorec R, Tester M, Maček P and Mason WT (1990) Cytotoxicity of Equinatoxin II from the sea anemone *Actinia equina* involves ion channel formation and an increase in intracellular calcium activity. *J Membrane Biol* 118: 243-249.
12. Akerman SN, Zorec R, Cheek TR, Moreton RB, Berridge MJ and Mason WT (1991) Fura-2 imaging of TRH and dopamine effects on calcium homeostasis of bovine

- lactotrophs. *Endocrinology* 129: 475-488.
13. Kordaš M, Melik Ž, Peterec D and Zorec R (1991) Current pump-assisted voltage-clamp apparatus. *Methods in Neurosciences* 4: 94-102.
  14. Kordaš M, Scuka M and Zorec R (1991) Anticholinesterase drugs and the mechanism of neuromuscular transmission. *In: Restorative Neurology*, A. Wernig, Vol. 5 (185-191). Elsevier Science Publishers BV.
  15. Mason WT, Hoyland J, Neylon CB, Kato M, Akerman SN, Bunting R, Tregear RT and Zorec R (1991) Dynamic, real time imaging of fluorescent probes of biological activity in living cells. *Journal of Medical Laboratory Science* 5: 41-52.
  16. Ruzzier F, Grohovaz F, Lorenzon P and Zorec R (1991) Properties of acetylcholine receptor channels in isolated skeletal muscle fibres in culture. *In: Restorative Neurology*, Vol.5, A.Wernig (ed.), Elsevier Science Publishers BV (145-150).
  17. Zorec R, Henigman F, Mason WT and Kordaš M (1991) Electrophysiological Study of Hormone Secretion by single Adenohypophyseal Cells. *Methods in Neurosciences* 4: 194-210.
  18. Zorec R, Sikdar SK and Mason WT (1991) Increased cytosolic calcium stimulates exocytosis in bovine lactotrophs. Direct evidence from changes in membrane capacitance. *J Gen Physiol* 97:473-497.
  19. Rupnik M, and Zorec R (1992) Cytosolic chloride ions stimulate  $Ca^{2+}$ -induced exocytosis in melanotrophs. *FEBS Letts* 303: 221-223.
  20. Zorec R (1992) Exocytosis in anterior pituitary cells. *Acta Pharm* 42: 281-286.
  21. Zorec R, Scuka M and Kordaš M (1992) Effects of reversible and irreversible cholinesterase inhibitors on acetylcholine-activated single channels. *J Memb Biol* 125: 41-48.
  22. Zorec R and Tester M (1992) Cytoplasmic calcium stimulates exocytosis in a plant secretory cell. *Biophys J* 63: 864-867.
  23. Grohovaz F, Lorenzon P, Ruzzier F and Zorec R (1993) Adult rat skeletal muscle fibres acquire denervation like properties in culture. *J Membrane Biol* 136: 31-42.
  24. Kocmur L, and Zorec R (1993) A new approach to separation of voltage-activated  $Ca^{2+}$  currents in rat melanotrophs. *Pflügers Arch* 425: 172-174.
  25. Lledo P-M, Vernier P, Didier J-D, Mason WT and Zorec R (1993) Inhibition of Rab 3B expression attenuates  $Ca^{2+}$ -dependent exocytosis in rat anterior pituitary cells. *Nature* 364: 543-544.
  26. Mason WT, Hoyland J, Davison I, Carew MA, Jonassen J, Zorec R, Lledo P-M,

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