Dr. ANDREA MARIO POMPEO ROMANI

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Education

October 1973-July 1977: Humanities with honors, Trapani, Italy.
October 1977-July 1984: M.D. cum Laude, University of Siena, Italy.
October 1986-September 1990: Ph.D. in Experimental and Molecular Pathology, Universities of Turin and Siena, Italy.

Appointments in Case Western Reserve University

September 1989-June 1991: Post-Doctoral Fellow, Department of Physiology and Biophysics, School of Medicine, Case Western Reserve University, Cleveland, OH, USA
July 1991-December 1991: Research Associate, Department of Physiology and Biophysics, Case Western Reserve University, School of Medicine, Cleveland, OH, USA.
January 1992-December 1992: Research Associate, Istituto di Patologia Generale (Institute of General Pathology), School of Medicine, University of Siena, Siena, Italy
December 15 1992-July 2006: Assistant Professor, Department of Physiology and Biophysics, Case Western Reserve University, School of Medicine, Cleveland, OH, USA.
July 2006-present: Associate Professor, Department of Physiology and Biophysics, Case Western Reserve University, School of Medicine, Cleveland, OH, USA.

Fellowships and Awards

July 1990-June 1991: "Hormonal Regulation of Mg^{2+} in cardiac cells", American Heart Association, Ohio Section.

Active Memberships in Professional and Scientific Societies

1990-present: Biophysical Society
1991-present: American Physiology Society
1996-present: American Society Cell Biology
The Oxygen Society
Research Society on Alcoholism
Endocrinology Society

Past Memberships in Professional and Scientific Societies

1986-1991: Italian Society of General Pathology
1986-1991: Italian Society of Biochemistry
1993-2005: American Association for the Advance of Science
1998-2005: American Diabetes Association

Current Collaborations

Dr. Nagy, Dept. Pathobiology, and Director P20 Alcohol Center, Cleveland Clinic Foundation (*Alcohol Liver Disease: Kupffer cells and EtOH*)
Dr. Szweda, Oklahoma Medical Research Foundation, Oklahoma City (*Protein modification by 4HNE*)
Drs. Jin, Wayne University, Detroit (*Cytoskeleton and adhesion modifications by ethanol*)
Dr. Colleen Croniger, Dept. Nutrition, Case Western Reserve University (*Liver Metabolism*)

Dr. George Dubyak, Dept. Physiology & Biophysics, Case Western Reserve University (*Pyrophosphate*)
Dr. Charles O'Neill, Emory University, Atlanta, Georgia (*Pyrophospate and vascular calcification*)
Dr. Marco Brotto, University of Kansas City-Missouri (*Alcoholic muscle toxicity*)

Teaching and Related Activities

1. Courses taught at Institute of General Pathology, School of Medicine, University of Siena, Siena, Italy

1984-1989, and 1991-1992: *General Pathology*, School of Medicine, Univ. Siena, Italy, 25 hours
1984-1989, and 1991-1992**:** *Immunology,* School of Medicine, Univ. Siena, Italy, 25 hours
1986-1989, and 1991-1992**:** *Immunology,* School of Dentistry, Univ. Siena, Italy, 25 hours
1984-1989, and 1991-1992**:** *Pathological Bases of Endocrine Diseases,* School of Medicine, Univ. Siena, Italy, 25 hours

2. Ph. D. Courses taught at Department of Physiology and Biophysics, School of Medicine, Case Western Reserve University, Cleveland, OH. All the courses were organized for small groups (8 to 12 students)

1998-1999: *Molecular Organization of the cell (Phol532* - Director: Dr. Gualberto), 6 hours
1998-2000: *Membrane Physiology (Phol472* **- Director)**, 8 hours
1998-2000: *Molecular Organization of the cell (Phol532* **- Director)**, 8 hours
1999-2002: *Physiology of Organ Systems (Phol480* **- Director),** 12 hours
2005-2008**:** *Cardiovascular Physiology (Phol514* - Director: Dr. Harvey), 8 hours
2006-2007: *Translational Physiology (Phol500* - Director: Dr. Cefaratti), 3 hours
2007- present: *Physiology of Organ Systems (Phol480* - **Director),** 22 hours
2010- present: *Cardiovascular Physiology (Phol514* - Director: Dr. Chandler), 10 hours
2011 - present: *Masters in Medical Physiology* – **Coordinator** of Endocrinology Block, 24 hours
2011 - present: *Master in Medical Physiology* – **Coordinator** of the Reproductive Physiology Block, 16 hours

3. Courses taught at the School of Medicine, Case Western Reserve University, Cleveland, OH.

1995-2007: **Endocrinology**, 2nd year small study groups (Director: Dr. Murphy), 8 hours
1996-2007: **Endocrinology**, 1st year small study groups (Director: Dr. Murphy/Dubyak), 4 hours
1996-2007: **Homeostasis I**, small study groups (Director: Dr. Dubyak), 4 hours
2000-2007: **Cardiovascular Physiology**, small study groups (Director: Dr. Harvey), 4 hours
2005-present: **Block 2- Endocrinology** (new medical school curriculum, small IQ groups), 6 hours
2005-present: **Block 4- Cardiovascular** (new medical school curriculum, small IQ groups), 6 hours

Professional Service

1. Departmental Service

1.1 Undergraduate Activities

1996 - present: **Director** of Summer Undergraduate Research Program (SURP), Department of Physiology and Biophysics, School of Medicine, Case Western Reserve University
1996 - present: **Coordinator** between SURP program, Department of Physiology and Biophysics, and Summer Program for Undergraduate Research (SPUR) - Howard Hughes, Case Western Reserve University.
2010 - present: **Director** of NSF-REU (Research Experience for Undergraduates) in Biology: Training Grant in Protein Dynamics, Department of Physiology and Biophysics, Case Western Reserve University

1.2 Graduate Activities

1996 - present: **Thesis Committee Member** for Master and PhD students (see detailed list below), and **Academic Advisor** for three PhD students in the Department of Physiology and Biophysics, Case Western Reserve University
2008 - present: **Director** Graduate Students Admission Committee, Department of Physiology and Biophysics, Case Western Reserve University.
2011 - present: ***Assistant Director*** of the program Masters in Medical Physiology, Department of Physiology and Biophysics, School of Medicine, Case Western Reserve University.

2011 - present: ***Member*** of the Masters in Medical Physiology Admission Committee, Department of Physiology and Biophysics, School of Medicine, Case Western Reserve University.
2011 - present: **Academic Advisor** for 12 students enrolled in the program *Masters in Medical Physiology*, Department of Physiology and Biophysics, School of Medicine, Case Western Reserve University.

1.3 Administrative Activities

1995 - 2004: **Director** of Facility and Equipment Committee, Department of Physiology and Biophysics, School of Medicine, Case Western Reserve University.
2001 - present; **Director** System Physiology Journal Club, Department of Physiology and Biophysics, School of Medicine, Case Western Reserve University.
2002 - 2005: **Coordinator** Seminar Series for the Department of Physiology and Biophysics, School of Medicine, Case Western Reserve University.
2006 - Present: ***Member*** of the Education Committee, Department of Physiology and Biophysics, School of Medicine, Case Western Reserve University.
2006 - present: ***Member*** of the Committee on Appointments, Promotions and Tenure (*CAPT*), Department of Physiology and Biophysics, School of Medicine, Case Western Reserve University.
2008 - 2009: ***Member*** of Space and Facility Committee during the renovation of the Department of Physiology and Biophysics, School of Medicine, Case Western Reserve University.
2008 - present: **Director** Graduate Students Admission Committee, Department of Physiology and Biophysics, School of Medicine, Case Western Reserve University.
2009 - present: ***Member*** of the Committee for the departmental WEB site renovation, Department of Physiology and Biophysics, School of Medicine, Case Western Reserve University
2011 - present: ***Member*** of the Masters in Medical Physiology Admission Committee, Department of Physiology and Biophysics, School of Medicine, Case Western Reserve University.

1.4 Facility Director Activities

2011 - present: **Director** of the Atomic Absorbance Facility, Department of Physiology and Biophysics, School of Medicine, Case Western Reserve University.

2. Institutional Service

2005 - present: ***Member*** DOES Committee at Case Western Reserve University.
2008 - present: ***Member*** *and* ***Interviewer*** BSTP (Biomedical Science Training Program) Graduate Students Admission Committee (PhD Program), Case Western Reserve University.
008 - present: ***Interviewe****r* for School of Medicine candidates, Case Western Reserve University.
2009 - present: ***Interviewer*** for MSTP (Medical Scientist Training Program) candidates for the MD/PhD program at Case Western Reserve University.
2011 - present: ***Interviewer*** for OMFS (Oral-Maxillo Facial Surgery School) candidates for the OMFS/School of Dentistry program at Case Western Reserve University.

3. Inter-Institutional Service

2008-present: ***Member*** of the Steering Committee for the P20 on Ethanol Liver Pathology (Laura Nagy, Director), Cleveland Clinic Foundation and Case Western Reserve University.

4. National Service

2005 – ISEF Judge, Cleveland
2009 - present: Member of the Strategic Alliances and Outreach Committee, Oxygen Society (SFRBM)
2010 - present: Member of Junior Awards Committee (SFRBM)
2010 - present: NSF-REU panel Reviewer
2011 – Present: NSF-graduate fellowships Reviewer
2012 - ISEF judge, Pittsburgh

5. Editorial Board

2005 - present: Archives of Biochemistry and Biophysics
2008 - present: Magnesium Research
2010 – present: World Journal of Gastro-Intestinal Physio-Pathology
2010 – Present: Journal of Membrane Science & Technology
2011 – Present: TheScientificWorldJOURNAL – Hepatology Section

6. Regular Peer Reviewer for

Archives of Biochemistry and Biophysics
Biochemical Pharmacology
Cardiovascular Research
Free Radicals in Biology and Medicine
Journal of Cellular Biochemistry
Magnesium Research
TheScientificWorldJOURNAL – Hepatology Section

7. Ad-Hoc Peer Reviewer for

American Journal Physiology – Cardiovascular Section
Biochimical Biophysical Acta,
Circulation Research
Endocrinology
Journal of Clinical Endocrinology and Metabolism
Journal Pharmacology & Experimental Therapeutics
Life Science
Metabolism

8. National Grant Reviewer for

2004: NIH – ICI: Special Emphasis panel
2004 - 2007: American Heart Association - Ohio Valley section 4B:
2004 - present: American Institute of Biological Science (DoD) - Alcohol panel
2005: NIH – ICI: Special Emphasis panel
2006: NIH - ZRG1-CB-D(40) - Special Emphasis Panel
2007 - present: Oak Ridge Associated Universities (ORAU)
2008 - present: American Institute of Biological Science (DoD) - Clinical trial panel
2010 - present: NSF-REU applications

9. International Grant Reviewer for

1998 - present: Medical Research Council (U.K.)
Swiss Research Council (Switzerland)
TOP grant Proposal (Netherlands)
National Research Council (South Africa)

10. Meeting Reviewer

2002 - present: Free Radicals in Biology and Medicine (SFRBM): Reviewer of Oral Communications to Annual Meeting

11. Meeting and Special Journal Organizer

2005**:** Session on 'Regulation of Cellular Functions by Magnesium" Gordon Conference on Biological Effects of Magnesium
2007: Editor Guest for Special Issue on "Magnesium Regulation and Function", *Archives of Biochemistry and Biophysics*

Post Doctoral Advisor

Dr. Christie Cefaratti, May 2002-May 2005, currently Scientific Consultant for Takeda Pharmaceuticals
Dr. Amy Nulton-Persson, June 2006 – May 2007
Dr. Ana T. Tomaszewska, Oct 2006 – May 2007, currently at ETH Zentrum, Zurig, Switzerland
Dr. Bozena A Konopnicka, Oct 2006 – May 2007, currently at Hospital Laboratory, Warsaw, Poland

Thesis Advisor

Carmela Marfella, Master in Physiology (1993-1996)
Dr. Donald Keenan, MD/Ph.D (1995-1998), Assistant Professor, Department of General Surgery, Univ. of Pittsburgh, Pittsburgh, Pennsylvania
Dr. Christie Luca - PhD (1995-2000), Scientific Advisor for Takeda Pharmaceuticals
Dr. Ossama Lashin – PhD (2001-2004), Internal Medicine, University Hospital of Cleveland, Cleveland, OH
Nicole Baitz – Master in Cell Physiology (2003-2005)
Amy Shafqat – Master in Physiology (John Carroll University, April 2010 -March 2011)
Zienab Etwebi – Master in Physiology (May 2010 – May 2011)
Chesinta Voma – PhD in Physiology (Cleveland State University, September 2011 – present)

Thesis Committee Member

Carmela Marfella (Master in Physiology, 1997)
Krista Kivilo
Anastasios Konstatakos
David Lucas (Ph.D., 1999)
Kenneth Humphries (Ph.D., 1999), Assistant Professor, Oklahoma Medical Center
Pranav Dhalal (Ph.D., 2000)
Hesham Sadek (Ph.D., 2004), Assistant Prof., Dept. Cardiology, Austin Medical School, Austin, TX
Linda Kunster (Ph.D., 2004)
Marie Zafiropulos (Master in Physiology, 2006)
Julie Rennison (Ph.D., 2008), Research Associate, Cleveland Clinic Foundation, Cleveland, OH
Barbara Kuri (Ph.D., 2009), Assistant Professor, TriC Community College, Cleveland
Benjamin Sommerlot (Ph.D. Biology, 2008 - 2010)[#]
Chepchumba Yego (Ph.D., 2010), Post Doctoral Fellow at NIH
Domenic Tony Prosdocimo (Ph.D., 2010), Research Associate, Cardiovascular Institute, Case Western Reserve University
Nick Cianciola (Ph.D., 2010), Research Associate in Microbiology, Case Western Reserve University
Milana Leygerman (Master in Physiology, 2011)
Jacqueline Hill (PhD in Physiology, 2012)
Michael Simmonson (PhD in Physiology, 2012)
Kate Fu (2012 – present)

Ad-Hoc International Thesis Committee Member

Rebecca van Wjik (Master, 2008) - Cape Town University, South Africa
Melvin M. Govender (Ph.D.,2011) - University of Kwazulu-Natal, South Africa
Shamal Vinesh Ramesar (PhD. 2011) University of Kwazulu-Natal, South Africa

Lab Rotations Advisor - Graduate Students

John Hwa (1992), Assistant Professor, Dept. Pharmacology, Dartmouth, NH
Bradley McConnell (1993), Assistant Professor, Dept. Pharmacology, Univ. of Texas, Houston, TX
Carmela Marfella (1993)[#]
Christie Luca (1994), Scientific Advisor for Takeda Pharmaceuticals
Krista Kivilo (1996)
Anastasios Konstantakos (1996-1997)

Hesham Shadek (1997-1998), Assistant Professor, Dept. Cardiology, Austin Medical School, Austin, TX
Theresa E. Fagan (1998-1999), Scientific Advisor for GenTech
Ossam Lashin (2000), Assistant Prof., Internal Medicine, University Hospital, Cleveland
Amr El Touky (2002), Resident in Internal Medicine, Mayo Clinic, Rochester, MN.
Nichole Baitz (2003), Researcher in Biotech Co..
Wichit Suthammarak (Oct. - Nov. 2005), BSTP student
Lisa M. Torres (summer 2006), recipient Cryle fellowship for medical student, Case Western Reserve Univ.
Jeffrey Look (Oct. 2006 - April 2007), Ph.D. Student
Lisa M Torres (summer 2007), Research training for Medical Student, MD, Case Western Reserve Univ.
Zienab Etwebi (Jan - April 2010), Master Student
Ken Gresham (May - June 2010), Ph.D. Student
Carl B. Gillombardo (Nov. 2011 - June 2012), Ph.D. Student – withdrawn as July 2012

Undergraduate and Summer Student Advisor

Elisabeth A. Dowell (summer student 1990 and 1991), MD, Case Western Reserve University, Family Practice, Tucson, AZ
Francesca Fragomeni (summer student 1993), MD
Veronica Matthews (undergraduate 1994)
Brian Grinberg (summer student 1994)
Veronica Matthews (undergraduate 1995)
Sangeeta Karle (summer student 1995), Master Immunology, John Hopkins Univ.
Patrick Tessman (summer student 1996), MD, Case Western Reserve University, Neurology
Veronica Matthews (summer student 1996)
Sheldon Joseph (summer student 1996), PhD, Dept. Physiology and Biophysics, Case Western Reserve University
Patricia Lamont (summer student 1997), MD
Veronica Matthews (summer student 1997), recipient Diabetes Found. Fellowship, currently MD, Sport Medicine, San Francisco, CA
Lauri A. Lehay (summer student 1998), recipient Diabetes Found. Fellowship
Julie E. Swindler (summer student 1998), MD, Neoucom
Michael Kob (summer student 1998), MD, Graz, Austria
Megan Howard (summer student 1999), PhD Microbiology, Colorado State University
Amy McKinnis (summer student 1999)
Tiffani Humphries (summer student 2000), recipient Howard Hughes fellowship
Faith Waldron (summer student 2000)
Megan Riffle (summer student 2001)
Emily Riffle (summer student 2001)
Ronya Emory (summer student 2001), recipient Howard Hughes fellowship
Jonathan Youngner (summer student 2002), MD, Tuffs University, Boston, MA
Beverly Perry (summer student 2003), Res. Assistant, Yale
B Dan Pipitone (summer student 2004), MO, Radiology, Metrohealth Hospital, Cleveland, OH
Christopher Painter (summer student 2004), recipient Howard Hughes fellowship
Christopher Painter (summer student 2005), MD, Yale
Grant Reed (summer student 2005), recipient Howard Hughes fellowship
Cleyton Pacheco (summer student 2005)
Grant Reed (summer student 2006), MD, Univ. Toledo
Deema Yousef (summer student 2006)
Maria Avkshtol (summer student - 2007), BS, Case
Mario Aragon (summer student – 2007), Master Bioengineering, New Mexico
Misty Ahmed (summer 2007 through summer 2008), BS, Bioengineering, Case Western Reserve University
Vera Avkshtol (summer student 2008), BS, Case
Amy Jackobs – Harper (summer student 2008), SoM, Univ. of Toledo
Huy Nguyen (summer student 2009)

Dana Selle (summer student 2009), recipient of DAGC fellowship
Steve Ewart (undergraduate, Senior Thesis 2009-2010, Physics major, Case Western Reserve University), Master in Biophysics, Ball Univ., Indiana
Andrew Barfell (summer student 2010)
Samantha Barclay (summer student 2010), NSF-REU training grant Recipient
Jaclyn Sweetapple (summer student 2010), NSF-REU training grant Recipient
Andrew Barfell (summer student 2011), NSF-REU training grant Recipient
Christine Battis (summer student 2011), NSF-REU training grant Recipient
Danial Amir Soltani (summer student 2011), Howard Hughes fellowship recipient
Neal Dharmadhikari (summer student 2011), Undergraduate, Senior, Case Western Reserve University
Elizabeth Learn (summer student 2012), NSF-REU training grant Recipient

Financial Supports

Active - Research

Subcontract from UT-Houston: *SLC polymorphism in hypertension*
Principal Investigator: Dr. Boron (Case Western Reserve University) Total Direct $350,000
Role: Collaborator Effort: 10%
Aims: To evaluate SLC polymorphism in hypertension

Active – Training

NSF-REU Award: *Protein Dynamics*
Period: 05.01.2009 – 08-31-2012 Total Direct Costs: $197,440
Role: Director Effort: 10%
Aims: To elucidate different mechanisms of protein dynamics

Pending

None

Completed

NIH-AAA: *Impairment of magnesium homeostasis in cardiac and liver cells by ethanol*
Period: 07.01.2005-06.30.2010: $1,300,000
Principal Investigator: Dr. Andrea Romani Effort: 35%
Aims: To investigate the mechanisms by which acute and chronic ethanol administration result in an altered cellular Mg2+ homeostasis and in a loss of Mg2+ from liver and cardiac cells.

NIDDK: Continuous Oxalate treatment and nephrolithiasis (NIDDK-073730)
Period: 04/01/2006– 03/31/2009
Aim: To characterize the effect of continuous oxalate administration on calcium and phosphate transport in renal epithelium and their role in CaOx
Role: **Collaborator** (PI: Dr. Susan Marengo) Effort: 15%

Case Center for Proteomics: *Proteomic Identification of Proteins modified by HNE in the heart of type-I diabetic rats*
Period: 01.01.2008-12.31.2008: $ 10.000
Principal Investigator: Dr. Andrea Romani
Aims: To identify mitochondrial proteins forming an adduct with HNE in the heart of type-I diabetic rats

NIH: *CARDIAC BIOENERGETICS* : HL 18708
Period: 04.01.1991-03.31.1996: $ 987.000
Principal Investigator: Dr. Antonio Scarpa
Aims: To understand the molecular mechanisms of heart bionergetics and function in normal and diseased states, with particular attention to the factors that govern tissue oxygen delivery and efficiency of ATP synthesis and utilization in the myocardium.
Role: Collaborator (Effort: 40% from 01.01.1993 to 03.31.1996)

NIH: *CARDIAC BIOENERGETICS* : HL 18708
Period: 04.01.1996-03.31.2001: $ 1,107.404
Principal Investigator: Dr. Antonio Scarpa
Aims: To understand the molecular mechanisms of heart bionergetics and function in normal and diseased states, with particular attention to the factors that govern tissue oxygen delivery and efficiency of ATP synthesis and utilization in the myocardium.
Role: Collaborator (Effort: 40%)

NIH: *CARDIAC BIOENERGETICS* : HL 18708
Period: 01.01.2002-12.31.2006: $ 1,410,143
Principal Investigator: Dr. Andrea Romani starting 07.01.2005
Aims: To understand the molecular mechanisms of heart bionergetics and function in normal and diseased states, with particular attention to the factors that govern tissue oxygen delivery and efficiency of ATP synthesis and utilization in the myocardium.

This project is Project 1 of the Program Project Grant "*ATP utilization and Ion Gradients in Myocardium*" coordinated by Dr. G. Dubyak

NIH-AAA: *Impairment of magnesium homeostasis in cardiac and liver cells by ethanol*
Period: 09.01.1998-08.31.2003: $350.000
Principal Investigator: Dr. Andrea Romani Effort: 50%
Aims: To investigate the mechanisms by which acute and chronic ethanol administration result in an altered cellular Mg2+ homeostasis and in a loss of Mg2+ from liver and cardiac cells.

Diabetes Association – Modulation of cellular magnesium by insulin in cardiac cells and its role on glucose transport regulation #397-A-97
Period: 07.01.1997 – 06.30.1999: $40,000/year
Principal Investigator: Dr. Andrea Romani – Effort 15%
Aims: To elucidate the correlation between changes in cellular Mg2+ homeostasis and glucose transport and utilization within cardiac myocytes under physiological and diabetic conditions.

LIST OF PUBBLICATIONS

1. Full Papers

1) **Romani A** (1984) Perdita della reazione di perossidazione lipidica come marker istochimico in isole preneoplastiche di epatociti di ratto trattato con cancerogeni, *Atti Accademia dei Fisiocritici*, Siena Serie XV, Tomo III, 365-369.
[Loss of lipid peroxidation as an early histochemical marker for neoplastic foci in hepatocytes from carcinogens-treated rats]

2) Benedetti A, Pompella A, Fulceri R, **Romani A,** Comporti M (1986) Detection of 4-hydroxynonenal and other lipid peroxidation products in the liver of bromobenzene-poisoned mice, *Biochimica Biophysica Acta* 876: 658-666.

3) A Benedetti, A Pompella, R Fulceri, **A Romani**, M Comporti (1986), 4-Hydroxynonenal and other aldehydes produced in the liver in vivo after bromobenzene intoxication, *Toxicological Pathology* 14: 457-461.

4) Benedetti A, Fulceri R, **Romani A**, Comporti M (1987) Stimulatory effect of glucose 6-phosphate on the non-mitochondrial Ca^{2+} uptake in permeabilized hepatocytes and Ca^{2+} release by inositol trisphosphate, *Biochimica Biophysica Acta* 928: 282-286.

5) Benedetti A, Fulceri R, **Romani A**, Comporti M (1988) MgATP -dependent glucose 6-phosphate-stimulated Ca^{2+} accumulation in liver microsomal fractions. Effects of inositol 1,4,5-trisphosphate and GTP, *Journal of Biological Chemistry* 263: 3466-3473.

6) Pompella A, **Romani A**, Fulceri R, Benedetti A, Comporti M (1988) 4-hydroxynonenal and other lipid peroxidation products are formed in mouse liver following intoxication with allyl alcohol, *Biochimica Biophysica Acta* 961: 293-298.

7) **Romani A**, Fulceri R, Pompella A, Benedetti A (1988) MgATP -dependent, glucose 6-phosphate-stimulated liver microsomal Ca^{2+} accumulation: difference between rough and smooth microsomes, *Archives of Biochemistry and Biophysics* 266: 1-9.

8) **Romani A,** Fulceri R, Pompella A, Ferro M, Benedetti A (1988) Active Ca^{2+} accumulation in the endoplasmic reticulum of different hepatomas: stimulation by phosphates and Ca^{2+}-releasing effect of IP3, *Annals of New York Academy of Science* 551: 249-252.

9) Benedetti A, Graf P, Fulceri R, **Romani A**, Sies H (1989) Ca^{2+} mobilization by vasopressin and glucagon in perfused livers. Effects of prior intoxication with bromotrichloromethane, *Biochemical Pharmacology* 38: 1799-1805.

10) Fulceri R, **Romani A**, Bellomo G, Benedetti A (1989) Liver cytosolic non-dialysable factor(s) can counteract GTP-dependent Ca^{2+} release in rat liver microsomal fractions, *Biochemical and Biophysical Research Communications* 163: 823-829.

11) Fulceri R, **Romani A**, Pompella A, Benedetti A (1990) Glucose 6-phosphate stimulation of MgATP-dependent Ca^{2+} uptake by rat kidney microsomes, *Biochimica Biophysica Acta* 1022: 129-133.

12) Fulceri R, Bellomo G, **Romani A**, Mirabelli F, Benedetti A (1990) Concerted operation of GTP, phosphates, glucose 6-phosphate and cytosol in regulating Ca^{2+} distribution among different 'microsomal' pools in rat liver, *Journal of Physiology* (London), 424: 41P.

13) **Romani A**, Scarpa A (1990) Hormonal control of Mg^{2+} transport in heart, *Nature* 346: 841-844.

14) **Romani A**, Scarpa A (1990) Norepinephrine evokes a marked Mg^{2+} efflux from liver cells, *FEBS Letters* 269: 37-40.

15) Pompella A, **Romani A**, Benedetti A, Comporti M (1991) Loss of membrane protein thiols and lipid peroxidation in allyl alcohol hepatotoxicity, *Biochemical Pharmacology* 41: 1255-1259.

16) Bànhegyi G, Fulceri R, Bellomo G, **Romani A**, Pompella A, Benedetti A (1991) Role of a non-mitochondrial Ca^{2+} pool in the synergistic stimulation by cyclic AMP and vasopressin of Ca^{2+} uptake in isolated rat hepatocytes, *Archives of Biochemistry and Biophysics* 287: 320-328.

17) **Romani A**, Marfella C, Scarpa A (1991) Hormonal regulation of magnesium transport in cardiac and liver cells, *Acta Medica Romana* 29: 267-276.

18) **Romani A**, Dowell E, Scarpa A (1991) cyclic AMP-induced Mg^{2+} release from rat liver hepatocytes, permeabilized hepatocytes and isolated mitochondria, *Journal of Biological Chemistry* 266: 24376-24384.

19) **Romani A**, Marfella C, Scarpa A (1992) Regulation of Mg^{2+} uptake in isolated rat myocytes and hepatocytes by protein kinase C, *FEBS Letters* 296: 135-140.

20) **Romani A**, Scarpa A (1992) cAMP Control of Mg^{2+} homeostasis in heart and liver cells, *Magnesium Research* 5: 131-137.

21) Fulceri R, Bellomo G, Gamberucci A, **Romani A**, Benedetti A (1993) Physiological concentrations of inorganic phosphate enhance MgATP-dependent Ca^{2+} uptake and IP3-induced Ca^{2+} release in microsomal fractions from non-hepatic cells, *Biochemical Journal* 289: 299-306.

22) **Romani A**, Marfella C, Scarpa A (1993) Regulation of magnesium uptake and release in the heart and in isolated rat ventricular myocytes, *Circulation Research* 72: 1139-1148.

23) **Romani A**, Marfella C, Scarpa A (1993) Hormonal stimulation of Mg^{2+} uptake in hepatocytes: Regulation by plasma membrane and intracellular organelles, *Journal of Biological Chemistry* 268: 15489-15495.

24) Keenan D, **Romani A**, Scarpa A (1995) Differential regulation of circulatory magnesium in the rat by β1 and β2 adrenergic receptor stimulation, *Circulation Research* 77: 973-983.

25) **Romani A**, Marfella C, Lakshmanan M (1996) Mobilization of Mg^{2+} from rat heart and liver mitochondria following the interaction of thyroid hormone with the adenine nucleotide translocase, *Thyroid* 6: 513-519.

26) Keenan D, **Romani A**, Scarpa A (1996) Regulation of Mg^{2+} homeostasis by insulin in perfused rat liver and isolated hepatocytes, *FEBS Letters* 395: 241-244.

27) Cefaratti C, **Romani A**, Scarpa A (1998) Characterization of two Mg^{2+} transporters in sealed plasma membrane vesicles from rat liver. *American Journal of Physiology* 275: C995-C1008.

28) Tessman P, **Romani A** (1998) Acute ethanol administration affects Mg^{2+} homeostasis in liver cells: Evidence for the activation of a Na^{+}/Mg^{2+} exchanger, *American Journal of Physiology* 275: G1106-G1116.

29) Di Francesco A, Desnoyer RW, Covacci V, Wolf F, **Romani A**, Cittadini A, Bond M (1998) Changes in magnesium content and subcellular distribution during retinoic acid-induced differentiation of HL60 cells, *Archives Biochemistry and Biophysics* 360: 149-157.

30) Cefaratti C, **Romani A**, Scarpa A (2000) Differential localization and operation of distinct Mg^{2+} transporters in apical and basolateral sides of rat liver plasma membrane, *Journal of Biological Chemistry* 275: 3772-3780.

31) Fatholahi M, Lanoue K, **Romani A**, Scarpa A (2000) Relationship between total and free cellular Mg^{2+} during metabolic stimulation of rat cardiac myocytes and perfused hearts, *Archives Biochemistry and Biophysics* 374: 395-401.

32) **Romani A**, Matthews V, Scarpa A (2000) Parallel stimulation of glucose and Mg^{2+} accumulation by insulin in rat hearts and cardiac ventricular myocytes, *Circulation Research* 86: 326-333.

33) Fagan TE, **Romani A** (2000) Activation of Na^{+}- and Ca^{2+}-dependent Mg^{2+} extrusion by α1- and β-adrenergic agonists in rat liver cells, *American Journal Physiology* 279: G943-G950.

34) Fagan TE, **Romani A** (2001) α1-adrenoceptor-induced Mg^{2+} extrusion from rat hepatocytes via a Na^{+}-dependent transport mechanism, *American Journal of Physiology* 280: G1145-G1156.

35) Young A, Cefaratti C, **Romani A** (2003) Chronic EtOH administration alters liver Mg^{2+} homeostasis, *American Journal of Physiology* 284: G57-G67

36) Cefaratti C, **Romani A** (2003) Intravesicular glucose modulates Mg^{2+} transport in liver plasma membranes from streptozotocin-treated rats, *Metabolism* 52: 1464-1470.

37) Lashin O, **Romani A** (2003) Mitochondria respiration and susceptibility to ischemia-reperfusion injury in diabetic hearts, *Archives Biochemistry and Biophysics* 420: 298-304.

38) Fagan TE, Cefaratti C, **Romani A** (2004) Streptozotocin-induced diabetes impairs Mg^{2+} homeostasis and uptake in rat liver cells, *American Journal Physiology* 286: E184-E193.

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2. Review Articles

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Invited Speaker in International Meetings

*) Regulation of intracellular magnesium in heart and liver cells, in *First Italian-German "Villa Vigoni" Conference on Ion and Cell Regulation*, Loveno di Menaggio, Como (Italy), Oct. 20-23, 1991.

*) Regulation of magnesium efflux and influx in cardiac and liver cells by cAMP and PKC and requirement of intra- and extracellular cations, in *XXXII International Congress of Physiology* (IUPS) - Glasgow (UK), Aug. 1-6, 1993.

*) cAMP Binds to the Adenine Nucleotide Translocase of Mitochondria and Induces a Sizable Magnesium Efflux, in *2nd International Congress of Biochemistry and Molecular Biology* (IUBMB) - Bari (Italy), Sept. 29-Oct. 3, 1993.

*) Regulation hormonal del eflujo e influjo celular de Mg^{2+}, *II Congreso IberoAmericano de Biofisica*, Puebla, Mexico, October 3-7, 1993.

*) Cellular Mg^{2+} fluxes, in *Second Italian-German "Villa Vigoni" Conference on Ion and Cell Regulation*, Loveno di Menaggio, Como (Italy), Oct. 10-13, 1993.

*) Direct effect of thyroid hormone on mitochondrial ATP translocase, in *Novel Action of Thyroid Hormone*, satellite meeting of the 1995 International Thyroid Congress, Toronto, Ontario (Canada), Sept. 10, 1995.

*) Increase of plasma Mg^{2+} level by selective stimulation of β2-adrenergic receptors in anesthetized rats, in *Third Italian-German "Villa Vigoni" Conference on Ion and Cell Regulation*, Loveno di Menaggio, Como (Italy), Oct. 8-11, 1995.

*) Hormonal control of Magnesium in Heart and Liver, in *Magnesium in Biochemical Processes*, Gordon Research Conference, Oxnard, CA, Jan. 29-Febr. 2, 1996.

*) Role of PKC in ethanol-induced inhibition of magnesium accumulation in liver cells, in *Magnesium in Biochemical Processes*, Gordon Research Conference, Oxnard, CA, March 3 – 6, 2008.

*) Isoproterenol and insulin: the ying-yang of regulation of Mg^{2+} homeostasis in mammalian cells, Ehrlich 2008 International Symposium, Nurnberg, Germany, Oct. 3-5, 2008.

Seminars

**) Regolazione del trasporto di magnesio in cellule cardiache ed epatiche, held at the Istituto di Patologia Generale, Università Cattolica del Sacro Cuore, Rome (Italy), November 13, 1991
[Regulation of Magnesium Transport in cardiac and liver cells]

**) β-adrenergic stimulation and role of cellular cAMP in mediating Mg^{2+} extrusion from cardiac and liver cells, held at Department of Nutrition and Metabolism, University of Montreal, Montreal, Quebec (Canada), August 24, 1992.

**) Controllo ormonale del trasporto di magnesio in cellule cardiache ed epatiche, held at the Istituto di Fisio-Patologia Clinica, Divisione di Endocrinologia, Università di Firenze, Florence (Italy), September 16, 1992.
[Hormonal regulation of Magnesium handling in cardiac and liver cells]

**) cAMP mediated Mg^{2+} efflux from cardiac ventricular myocytes, held at Merck Sharp & Dome, West Point, PA, February 18, 1994.

**) Regolazione ormonale dei livelli plasmatici e cellulari di magnesio: Implicazioni fisio-patologiche e farmacologiche, held at the Istituto di Clinica Medica II, Università di Firenze, Florence (Italy), October 20, 1995.
[Hormonal regulation of serum and cellular Magnesium levels: Physio-Pathological and Pharmacological implications]

**) Role of α- and β-adrenergic receptors and insulin in the regulation of cellular magnesium in cardiac and liver cells, held at the Istituto di Patologia Generale, Universita' di Siena, Siena (Italy), January 10, 1998.

**) Impairment of Mg^{2+} homeostasis in liver cells following acute administration of ethanol, Department of Biological Sciences, University of Novara, Novara (Italy), October 28, 1998.

**) Hormonal regulation of cellular Mg^{2+} in cardiac myocytes and hepatocytes: Physiological and pathological implications, held at Endocrine Grand Rounds, Division of Endocrinology, Case Western Reserve University, Cleveland, Febr. 3, 1999

**) Hormonal regulation of cellular Mg^{2+} content under physiological and pathological conditions, held at Department of Nutrition, University of Montreal, Montreal, Canada, March 17, 1999.

**) Hormonal regulation of cellular and plasma Mg^{2+} content under physiological and pathological conditions, held at Institute of General Pathology, Universita' di Ferrara, Ferrara, Italy, Oct. 27, 1999.

**) Hormonal Regulation of cellular and plasma Mg^{2+} content under physiological and pathological conditions, held at Department of Pharmacological Science, Universita' di Siena, Siena, Italy, Nov. 5, 1999.

**) Physio-pathology of magnesium, an overlooked ion, held at Department of Pharmacological Science, Universitya' di Siena, Siena, Italy, Nov.16, 2000.

** Alteration of Mg^{2+} homeostasis in liver cells following acute and chronic EtOH administration: Implications for liver metabolism, held at Department of Nutrition, Case Western Reserve Univ., Cleveland, Oct. 19, 2001.

** Regulation of Calcium homeostasis, Endocrinology Division, Cleveland Clinic Foundation, September 13, 2002.

** Regulation of cellular magnesium and its alteration under pathological conditions, Center for Anesthesiology Research, Cleveland Clinic Foundation, October 1, 2002.

** Alteration of Mg^{2+} homeostasis in liver cells following acute and chronic EtOH administration: Implication for liver metabolism, held at Division of Gynecology, University Hospital, Cleveland, April 9, 2003.

** Functional modification of cardiac mitochondrial proteins by 4-HNE in streptozotocin diabetic rats. Cardiovascular Seminar, School of Medicine, Case Western Reserve University, December 3, 2004

** How is cellular magnesium regulated? And why should we care?, MetroHealth Medical Center, Cleveland, OH, February 5, 2008.

** Functional modification of cardiac mitochondrial proteins by 4-HNE in streptozotocin diabetic rats. Case Center for Proteomics, Cleveland, OH, April 24, 2008.

** Alteration of Mg^{2+} homeostasis in liver cells following acute and chronic EtOH administration: Implication for liver metabolism, held at Department of PathoBiology, Cleveland, Clinic Foundation, Cleveland, March 20, 2009.

** Effect of acute and Chronic EtOH administration on Hepatic Mg^{2+} homeostasis, College of Wooster, Sept, 11, 2009.

** Role of Mg^{2+} in Liver metabolism, Cedarville University, Dec. 5, 2011.

Fields of Interest

1) Magnesium homeostasis, transport and redistribution in cardiac and liver cells under physiological (i.e. stimulation by catecholamines and insulin) and pathological (i.e. following acute and chronic ethanol administration and under diabetic conditions) conditions. Role of magnesium homeostasis on hepatic glucose and fatty acid metabolism.

2) Calcium homeostasis in liver cells: role of smooth and rough endoplasmic reticulum of liver cells in maintaining a physiological level of cytosolic free Ca^{2+} using glucose 6-phosphate or inorganic phosphates to enlarge the reticular pool of Ca^{2+} mobilizable by inositol 1,4,5-trisphosphate and GTP.

3) Identification of proteins forming stable adducts with 4-hydroxynonenal (4-HNE) in diabetes and alcoholism or following lipid peroxidation induced by halo-alkenals, bromo-benzene and allyl alcohol in liver cells and under diabetic conditions: thiols groups in membranes of subcellular compartments (i.e. mitochondria, endoplasmic reticulum, etc.) and in the cytoplasm.

(Identification of proteins forming stable adducts with 4-hydroxynonenal (4-HNE) under various conditions and its implications for mitochondria and ER functions)

Key-Works:

- Mg^{2+} homeostasis
- liver toxicology,
- Alcohol
- Diabetes
- 4-HNE/protein adducts

Signaling: cAMP, protein kinase C, insulin, glucose 6-phosphate, glucose, inorganic phosphate.

Experimental Models: perfused heart; perfused livers, cell isolation, cell in culture, plasma membrane vesicles, mitochondria, endoplasmic reticulum vesicles (microsomes), protein purification.

Techniques: organ perfusion, cell isolation, organelle isolation, TLC, HPLC, fluorimetry, spectroscopy, biochemical assay, antisense technique, radioisotope distribution, protein purification, gel electrophoresis, WB analysis, mRNA isolation.