

Romina Vargiu

EDUCATION

- March 1997: Degree in Biological Sciences, University of Cagliari.
- January 2003: PhD in Human Physiology, curriculum in Human Physiology, University of Pavia.

ACADEMIC ACTIVITIES

- December 2002: University Researcher in Human Physiology.

TEACHING ACTIVITIES RELATED TO GSD BIOS-06/A (PROFILE SSD BIOS-09)

Teaching assignments: Degree Courses, Faculty of Medicine and Surgery

- Human Physiology (endocrine system) Specialist Degree Course in Medicine and Surgery (6 hours) (A.Y. 2006-2007).
- Human Physiology. Integrated course of Anatomy and Physiology of the Degree Course in Dental Hygiene. (25 hours) (From A.Y. 2004-2005 to A.Y. 2009-2010).
- Applied Physiology. Integrated course of Physiology of the Degree Course in Medical Radiology Techniques. (10 hours) (From A.Y. 2004-2005 to A.Y. 2010-2011).
- Human Physiology (endocrine and cardiovascular system). Integrated course of Anatomy, Histology, Physiology, Physiology of Human Reproduction, Basic Midwifery of the Degree Course in Midwifery. (25 hours) (From A.Y. 2004-2005 to A.Y. 2009-2010).
- Human Physiology Integrated course Anatomy-Physiology of the Degree Course in Health Assistant (20 hours) (From A.Y. 2004-2005 to A.Y. 2009-2010).
- Human Physiology (endocrine, renal, and locomotor system) Degree Course in Physiotherapy Integrated course of Physiology and rehabilitation techniques (20 hours) (A.Y. 2006-2007).
- Human Physiology Degree Course in TPALL (16 hours) (A.Y. 2009-2010).
- Human Physiology of the master's Degree Course in Dentistry and PD (48 hours) (A.Y. 2009-2010 and 2010-2011).
- Human Physiology of the master's Degree Course in Medicine and Surgery (Even Channel) (A.Y. 2009-2010; 2011-2011).
- Human Physiology of the Degree Course in TRMIR (from A.Y. 2013-2014 to present).
- Human Physiology of the Degree Course in Midwifery (from A.Y. 2013-2014 to present).
- Elements of Human Physiology of the Degree Course in Medical Engineering (A.Y. 2023-2024).

Teaching assignments: Specialization Schools, Faculty of Medicine and Surgery

- Physiology of muscle contraction II. Specialization School in Sports Medicine (From A.Y. 2004-2005 to present).
- Motility of the alimentary canal. Specialization School in Food Science (From A.Y. 2004-2005 to present).

- Human Physiology. Specialization School in Medical Physics (A.Y. 2021-2022 to present).

ACTIVATION OF OPTIONAL COURSES

- A.Y. 2003-2004: theoretical-practical monographic course for students of the Specialist Degree Course in Medicine and Surgery, titled: The experimental approach for the in vitro study of smooth muscle organs.
- A.Y. 2004-2005: theoretical-practical monographic course for students of the Specialist Degree Course in Medicine and Surgery, titled: Motility and control of smooth muscle organs.

STUDENT EXERCISES

- From the academic year 1998-1999 to 2010 practical exercises for students of the Integrated Course of Human Physiology, even channel, of the master's Degree Course in Medicine and Surgery, on Electrocardiography and Spirometry.

MANAGEMENT ACTIVITIES

- 2019 to present: Self-assessment commission of the TRMIR Degree Course.
- 2022 to present: Self-assessment commission of the technical class.
- 2019 to present: Validation commission of the TRMIR Degree Course.
- 2022 to present: Validation commission of the technical class.

SCIENTIFIC COLLABORATIONS

- Department of Neurosciences of the University of Cagliari.
- Department of Surgical Sciences and Organ Transplants Sections of Urological Clinic and Surgery 2, University of Cagliari.
- Department of Cytomorphology Section of Pathological Anatomy, University of Cagliari.
- Department of Surgical, Maternal-Infant and Imaging Sciences, Section of Gynecological Obstetrics Clinic and Human Reproduction Physiology, University of Cagliari.
- Institute of Human Physiology of the Catholic University of the Sacred Heart of Rome.
- Institute of Biochemistry of the University of Ancona.
- CNR Institute of Neurogenetics, Neuropharmacology, and Neurosciences S.c.a.r.l., Selargius (Cagliari).
- Neuroscience Section of the Department of Medical Sciences, University of Cagliari.
- Department of Life and Environmental Sciences, University of Cagliari.

SEMINARS

- A.Y. 2001-2002 Seminar on experimental techniques for the study of isolated organs, Department of Toxicology of the Faculty of Pharmacy of the University of Cagliari.

FUNDING

- 2003: study of the "Role of nitric oxide in the myogenic control of intestinal motility in humans", within the framework of local Scientific Research projects (ex 60%).

- 2007: participation in a Research project titled: "Study of the positive inotropic effects of a mixture consisting of PLC, CoQ10, and omega-3 fatty acids, on the force-frequency responses of papillary muscles of BIO TO2 hamsters.
- 2009: participation in a Research project titled: "Study of cardiac muscle biomechanics and the kinetics of acto-myosin bridges in cardiomyopathic hamsters treated with natural substances (PLC, CoQ10, and omega-3 fatty acids).
- 2009: funding for the study of the "Kinetics of myosin molecular motors in the human ureter" within the framework of local Scientific Research projects (ex 60%).
- 2010-2011: two fundings: 1) study of the "remodeling of the sarcomeric geometry of the cardiomyopathic muscle induced by natural substances" 2) modeling study of the kinetics of myosin molecular motors in the human ureter", within the framework of local Scientific Research projects (ex 60%).
- 2012: funding from the Autonomous Region of Sardinia-L.R.7 August 2007, n.7: "Promotion of scientific research and technological innovation in Sardinia", for a basic research project titled: Morphofunctional investigation of diabetes-induced damage to the cardiovascular system.
- 2017: funding from the Autonomous Region of Sardinia-L.R.7 August 2007, n.7: "Promotion of scientific research and technological innovation in Sardinia", for a basic research project titled "Acute hypoxia during physical exercise: effects on circulatory regulation, body composition, and metabolome in humans and animal models".
- 2018: funding for a two-year research project at the University of Cagliari, (Three-year agreement between the Sardinia Foundation and Sardinian Universities, 2018 year) titled: "Effects of acute hypoxia on cardiovascular regulation and cognitive functions in athletes".
- 2022: participation in the PRIN (Projects of Relevant National Interest): Neurochemical, neuroinflammatory, and cardiovascular modifications during Red Bull self-administration, alone or in association with Ethanol, from adolescence to adulthood.

SCIENTIFIC AND RESEARCH ACTIVITY

The scientific activity conducted with experimental and theoretical approaches (development and application of mathematical models) is primarily focused on muscle biomechanics and its myogenic, nervous, and hormonal control in humans and animal models.

Significant Results

1. The most significant result obtained so far is the discovery that the human ejaculatory duct, previously considered by the international scientific community as a simple passive conduit, has motor and control functional characteristics that elevate it to the status of an organ.
2. In the context of an experimental investigation on the effects of antidiuretic hormone on the motility of intrarenal urinary tracts in humans, it was demonstrated for the first time that the antidiuretic hormone, in addition to its primary role of promoting water absorption, increases the hydraulic impedance of intrarenal urinary ducts in situations of significant intracorporeal fluid conservation.

Remodeling of the Sarcomeric Geometry of Cardiomyopathic Muscle Induced by Natural Substances.

Dilated cardiomyopathy (DCM) is a pathology characterized by ventricular dilation, insufficient contractile force, and consequent impairment of the heart muscle's pumping action. DCM manifests with deterioration of cardiac tissue, presenting fibrotic and necrotic infiltrations, increased ventricular volume, and reduced myocardial contractility. The therapeutic approach involves the administration of digitalis drugs, diuretics, and enzymes (ACE). However, the action of these substances is to mitigate the consequences of DCM, and therefore the only satisfactory therapy at the moment is heart transplantation. On the other hand, scientific literature reports studies carried out on animal models that support the hypothesis that natural and synthetic substances are capable of preventing or counteracting the pathological processes that lead to DCM. Numerous studies on animal models and humans have demonstrated that at least three natural substances present in our body have cardioprotective and cardioreparative properties. These are: propionyl-L-carnitine (PLC), coenzyme Q10 (CoQ10), and omega-3 fatty acids (omega-3). Recently, it has been demonstrated that chronic oral administration (7 weeks) of a mixture consisting of PLC, CoQ10, and omega-3 fatty acids in young cardiomyopathic hamsters results in an improvement in cardiac mechanics in terms of enhanced pumping action. The experimental results obtained suggest the hypothesis that the improved contractility of the heart muscle is due to a remodeling of the compromised sarcomeric structure. In the continuation of the research, it is intended to explore, in cardiomyopathic hamsters, the effects of chronic administration of natural substances such as PLC, CoQ10, and omega-3 fatty acids on the structures of the cardiac muscle's contractile machinery, particularly to verify whether these substances are capable of restoring normal sarcomeric geometry. (The project is carried out in collaboration with the Cytomorphology Section of this Faculty).

Modeling Study of the Kinetics of Myosin Molecular Motors in the Human Ureter.

The origin and propagation modes of the propulsive motor wave responsible for advancing the urinary bolus in the ureter, have not been fully clarified and the available information derives from experimental research conducted in animal models. No experimental investigation has been undertaken so far in humans and animal models to explore the molecular bases of smooth muscle contraction in the ureter. In particular, nothing is known about the kinetics of molecular motors present in the smooth muscle cell of the ureter where the propulsive motor event originates. The experimental investigation will allow obtaining the first observations in humans on the number and kinetics of myosin molecular motors present in the smooth muscle cells of the proximal portion of the human ureter. The purpose of this research is to study for the first time, through experimental and theoretical tests (mathematical model), the physiological aspects of the molecular contractile structures where ureteral peristalsis originates. The results obtained will allow the construction of a new physiological paradigm to clarify the causes of the onset of pathophysiological alterations such as vesicoureteral reflux, ureteral obstruction, and megaureter. The innovative experimental-theoretical approach used opens the way to in vitro experimentation of new drugs capable of correcting functional anomalies of the molecular structures where the motor activity of the ureteral conduit originates. (The project is carried out in collaboration with the Department of Surgical Sciences, Urology Section of this Faculty).

Current Research

1. Application of Huxley's mathematical model on cardiac papillary muscles of an animal model of Type 1 Diabetes.

2. Acute hypoxia during physical exercise: effects on circulatory regulation, body composition, and metabolome in humans and animal models.
3. Effects on the heart following chronic ingestion of energy drinks (Red Bull) in adolescent rats.

Full Papers Published in International Journals

1. Licheri D, Vargiu R, Del Monaco S, Fadda F, Mancinelli R. Chronic ethanol consumption induces hypomotility in the portal vein of Sardinian alcohol-preferring rats. *Alcohol & Alcoholism*. 1999 Mar-Apr;34(2): 169-174.
2. Mancinelli R, Tonali P, Romani R, Tringali A, Vargiu R, Azzena GB. Mechanical properties of smooth muscle portal vein in normal and dystrophin-deficient (mdx) mice. *Exp Physiol*. 1999 Sep;84(5): 929-940.
3. Rossetti ZL, Mameli M, Vargiu R, Fadda F, Mancinelli R. Biphasic effects of NMDA on the motility of the rat portal vein. *Br Journal of Pharmacology*. 2000 Jan;129 (1): 156-162.
4. Mancinelli R, Usai P, Vargiu R, Lisa AD, Scarpa RM, Usai E. Human ejaculatory duct: parameters of smooth muscle motor activity and modulatory role of autonomic drugs. *Exp Physiol*. 2000 Jul; 85.4 pp. 465-467.
5. Licheri D, Vargiu R, Fadda F, Fabrizi A, Mancinelli R. Long-term voluntary ethanol consumption induces impairment of the mechanical performance in the papillary muscle of Sardinian alcohol-preferring rats. *Alcohol & Alcoholism*. 2001 Jan-Feb; Vol. 36(1): 44-47.
6. Mancinelli R., Fabrizi A., Del Monaco S., Azzena G.B., Vargiu R., Colombo G.C., Gessa G.L. Inhibition of peristaltic activity by Cannabinoids in the isolated distal colon of mouse. *Life Sciences*. 2001, Vol 69/1: 101-111.
7. Mancinelli R, Fabrizi A, Vargiu R, Morrone L, Bagegta G, Azzena GB. Functional role of inducible nitric oxide synthase on mouse colonic motility. *Neurosci Lett*. 2001 Sep 28;311(2): 101-4.
8. Romina Vargiu, Donatella Licheri, Anna Maria Carcassi, Silvia Naimi, Maria Collu, Gian Paolo Littarru, and Rino Mancinelli. Enhancement of muscular performance by a co-formulation of Propionyl-L-Carnitine, Coenzyme Q10, Nicotinamide, Riboflavin and Pantothenic acid in the rat. *Physiol Behav*. 2002 Jun;76(2): 257-263.
9. Ruiu S, Pinna GA, Marchese G, Mussinu JM, Saba P, Tambaro S, Casti P, Vargiu R, Pani L. Synthesis and characterization of NESS 0327: a novel putative antagonist of the CB1 cannabinoid receptor. *J Pharmacol Exp Ther* 2003 Jul; 306 (1):363-370.
10. Vargiu R, Usai P, De Lisa A, Argiolas A, Scarpa RM, Gessa GL, Usai E, Fraschini M, Mancinelli R. Vasopressin excitatory action on smooth muscle from human renal calyx pelvis. *Pharmacol Res*. 2004 Dec; 50 (6): 617-622.
11. Mancinelli R, Vargiu R, Cappai A, Floris G, Fraschini M, Faa G. A metabolic approach to the treatment of dilated cardiomyopathy in BIO T0-2 cardiomyopathic Syrian hamsters. *BioFactors* 2005 23; 1-9.
12. Frascarelli S, Ghelardoni S, Chiellini G, Vargiu R, Ronca-Testoni S, Scanlan TS, Grandy DK, Zucchi R. Cardiac effects of trace amines: pharmacological characterization of trace amine-associated receptors. *Eur J Pharmacol*. 2008 Jun 10;587(1-3):231-6. Epub 2008 Apr 7.

13. Romina Vargiu, Gian Paolo Littarru, Gavino Faa and Rino Mancinelli. Positive inotropic effect of coenzyme Q10, omega-3 fatty acids and propionyl-L-carnitine on papillary muscle force-frequency responses of BIO T0-2 cardiomyopathic Syrian Hamsters. *BioFactors* 2008 32: 135-144.
14. Romina Vargiu, Gian Paolo Littarru, Matteo Frascini, Anna Perinu, Luca Tiano, Alessandro Capra and Rino Mancinelli. Enhancement of shortening velocity, power, and acto-myosin cross bridge (CB) kinetics following long-term treatment with propionyl-L-carnitine, coenzyme Q10 and omega-3 fatty acids in BIO T0-2 cardiomyopathic Syrian Hamsters papillary muscle. *BioFactors* 2010 36: 229-239.
15. Romina Vargiu, Anna Perinu, Frank Tintrup, Francesca Broccia, Antonello De Lisa. Regional differences of energetics, mechanics, and kinetics of myosin cross-bridge in human ureter smooth muscle. *Int J Physiol Pathophysiol Pharmacol* 2015; 7(1): 34-43.
16. Carta G, Murru E, Vargiu R, Collu M, Carta M, Banni S, Stancampiano R. Essential fatty acids deficient diet modulates N-Acylethanolamide profile in rat's tissues. *Prostaglandins Leukot Essent Fatty Acid*. 2020 Feb; 153:102053. Doi:10.1016/j.plefa.2020.102053. Epub 2020 Jan 15. PMID: 31978675.
17. Scheggi S, Rossi F, Corsi S, Fanni S, Tronci E, Ludovica C, Vargiu R, Gambarana C, Muñoz A, Stancampiano R, Bjorklund A, Carta M. BDNF Overexpression Increases Striatal D3 Receptor Level at Striatal Neurons and Exacerbates D1-Receptor Agonist-Induced Dyskinesia. *J Parkinsons Dis*. 2020 Jul 8. doi: 10.3233/JPD-202061. Online ahead of print. PMID: 32651332
18. Magnani S, Mulliri G, Roberto S, Sechi F, Ghiani G, Sainas G, Nughedu G, Vargiu R, Bassareo PP, Crisafulli A. Systolic and Diastolic Functions After a Brief Acute Bout of Mild Exercise in Normobaric Hypoxia. *Front Physiol*. 2021 Apr 23;12:650696. doi: 10.3389/fphys.2021.650696. eCollection 2021. PMID: 33967823 Free PMC article.
19. Isola R, Broccia F, Casti A, Loy F, Isola M, Vargiu R. STZ-diabetic rat heart maintains developed tension amplitude by increasing sarcomere length and crossbridge density. *Exp Physiol*. 2021 Jul;106(7):1572-1586. doi: 10.1113/EP089000. Epub 2021 May 20. PMID: 33977604 Free PMC article.
20. Chronic Red Bull Consumption during Adolescence: Effect on Mesocortical and Mesolimbic Dopamine Transmission and Cardiovascular System in Adult Rats. Vargiu R, Broccia F, Lobina C, Lecca D, Capra A, Bassareo PP, Bassareo V. *Pharmaceuticals (Basel)*. 2021 Jun 24;14(7):609. doi: 10.3390/ph14070609. PMID: 34202876 Free PMC article.
21. Acute Exercise with Moderate Hypoxia Reduces Arterial Oxygen Saturation and Cerebral Oxygenation without Affecting Hemodynamics in Physically Active Males. Mulliri G, Magnani S, Roberto S, Ghiani G, Sechi F, Fanni M, Marini E, Stagi S, Lai Y, Rinaldi A, Isola R, Vargiu R, Spranger MD, Crisafulli A. *Int J Environ Res Public Health*. 2022 Apr 10;19(8):4558. doi: 10.3390/ijerph19084558. PMID: 35457425 Free PMC article.
22. Male and Female Mitochondria Respond Differently after Exercising in Acute Hypoxia. Ylenia Lai, Francesco Loy, Michela Isola, Roberta Noli, Andrea Rinaldi, Carla Lobina, Romina Vargiu, Flaminia Cesare Marincola, Raffaella Isola. *Biomedicine* 2023 Nov 26;11(12):3149. doi: 10.3390/biomedicines11123149. PMCID: PMC1074043 Free PMC article.
23. Receptor and metabolic insights on the ability of caffeine to prevent alcohol-induced stimulation of mesolimbic dopamine transmission. Bassareo V, Maccioni R, Talani G, Zuffa S, El Abiead Y, Lorrai I, Kawamura T, Pantis S, Puliga R, Vargiu R, Lecca D, Enrico P, Peana A, Dazzi L, Dorrestein PC, Sanna PP, Sanna E, Acquas E. *Transl Psychiatry*. 2024 Sep 28;14(1):391. doi: 10.1038/s41398-024-03112-6, PMID: 39341817 Free PMC article.

Full Papers Published in National Journal

24. Licheri D., Carcassi A.M., Vargiu R., Naimi S., Capra A., Mancinelli R. L'incremento del metabolismo ossidativo induce un aumento dell'assunzione di cibo nel ratto. *La Rivista di Scienza dell'Alimentazione*. 2001, 2: 115-118.
25. Vargiu R. La somministrazione dei cofattori Propionil – L – Carnitina, Coenzima Q10, Nicotinammide, Riboflavina e Acido pantotenico induce nel ratto un aumentato utilizzo dei substrati energetici. *La Rivista di Scienza dell'Alimentazione*. 2002, 2: 141-145.
26. Vargiu R, Perinu A, De Lisa A, Tintrup F, Manca F, Mancinelli R. Origin of motion in the human ureter: mechanics, energetics and kinetics of the myosin molecular motors. *Urologia*. 2012, 79(2): 123-129.

Proceedings of International Conferences

27. R.Mancinelli, R.Vargiu, D.Licheri, S.Naimi, A.Capra, A.Virman, G.P.Littarru. Formulation of oxidative phosphorylation substrates improves motor functions of skeletal, cardiac and smooth muscles. Second Conference of the International Coenzyme Q10 Association. Frankfurt, Germany December 1-3, 2000 pp. 133-136
28. R. Mancinelli, R. Vargiu, A. Cappai, G. Floris, M. Frascini, A. Capra, G. Faa. Cardioprotective effects of propionyl-L-carnitine, coenzyme Q10 and omega 3 fatty acids in the cardiomyopathic BIO T0-2 hamster: structural and functional aspects. Fourth conference of the International Coenzyme Q10 Association, Los Angeles, CA, USA April 14-17, 2005 pp. 140-143.
29. M. Frascini, M. A. Wirth, R. Vargiu, A. Balestrieri, L. Barberini, Automatic classification of mammographic masses by ROI cross sectional intensity profile analysis, International Conference on Mathematics and Engineering Techniques in Medicine and Biological Sciences, Las Vegas USA, June 20-23, 2005, CSREA Press.
30. R. Vargiu, G.P.Littarru, G. Faa, R.Mancinelli. Cardioreparative effect of a coformulation of CoQ10, propionyl-L-carnitine and omega-3 fatty acids, on BIO TO-2 cardiomyopathic Syrian hamsters. The Fifth Conference of the International Coenzyme Q10 Association. Kobe, Japan November 9-12, 2007, pp 46-47.

Proceedings of national Conferences

31. Mancinelli R, A Bertuzzi, S Salinari, R Vargiu, GB Azzena. Motilità del canale alimentare. 54° Riunione Società Italiana di Fisiologia. Chieti 29 settembre-2 ottobre, 2003.

Oral presentations at national conferences

32. R. Mancinelli, R. Vargiu, M. Peretti, P. Usai, L. Arba, C. Chillura, A. De Lisa, R.M: Scarpa, and E. Usai. New observations on motility and its intrinsic nervous control in human isolated ureter. Meeting Congiunto Sif/Sibpa 6-8 Ottobre 1997 Pavia.
33. M. Peretti, R. Vargiu, L. Carbini, A. Peretti, F. Fadda, M. Bortolato, G.B. Azzena and R. Mancinelli. Amino-Acids action on motility intestine. Meeting Congiunto Sif/Sibpa 6-8 Ottobre 1997 Pavia.
34. R.Mancinelli, M.Mameli, R.Vargiu, F.Fadda and Z.Rossetti. Nmda receptor-mediated modulation of spontaneous phasic activity of isolated rat portal vein. *Pflugers Archiv. European Journal of Physiology* (1998) 436: R38.
35. Licheri D., Vargiu R., Del Monaco S., Fadda f., Mancinelli R. Changes in mechanical properties of Sardinian alcohol preferring rat portal vein. *Pflugers Archiv. European Journal of Physiology*. (1998) 437: R69.

36. R. Mancinelli, A. De Lisa, R. Vargiu, R. Scarpa, P. Usai, S. Capra and E. Usai. Static and dynamic properties of human kidney infundibulum. *Pflugers Archiv. European Journal of Physiology*. (1998) 437: R71.
37. R. Mancinelli, A. De Lisa, R. Vargiu, P. Usai, R.M. Scarpa, C. Varsi, G. Ambu, M. Manchia, E. Usai. Human renal minor calyx as a lift and force pump. *Pflugers Archiv. European Journal of Physiology* (2000) 439: R89.
38. D. Licheri, R. Vargiu, F. Fadda, M. Sinis, A. Capra, G.B. Azzena, R. Mancinelli. Changes in myocardial contractile behaviour induced by chronic ethanol consumption in sP rats. *Pflugers Archiv. European Journal of Physiology* (2000) 439: R83.
39. M. Mameli, Z.L. Rossetti, R. Vargiu, F. Fadda, R. Mancinelli. Does a glutamatergic innervation modulate the motility of the portal vein? *Pflugers Archiv. European Journal of Physiology* (2000) 439: R88.
40. R. Vargiu, A. De Lisa, P. Usai, R. Scarpa, M. Manchia, G. Ambu, R. Mancinelli and E. Usai. Isometric and isotonic contraction of human ureter. *Pflugers Archiv. European Journal of Physiology* (2000) 440: R34.
41. R.Vargiu, R.Mancinelli, S.Capra, F.Gabriele. In vitro effects of *Hymenolepis diminuta* fractions on rat mechanical intestinal activity. *Parassitologia* 42 (suppl.1), 2000
42. R.Mancinelli, R.Vargiu, P.Usai, A.De Lisa, R.M.Scarpa, and E.Usai. First functional observations on human ejaculatory duct smooth muscle. *Riunione autunnale Società Italiana di Fisiologia*. 25-27 settembre 2000 Catania.
43. R.Vargiu, R.Mancinelli, G.L.Gessa, A.Argiolas, R.M.Scarpa, P.Usai, A.De Lisa, E.Usai. Modulatory role of vasopressin on human renal calyx motility. *Pflugers Archiv. European Journal of Physiology* 2001 (in press).
44. D. Licheri, R. Vargiu, S. Naimi, A.M. Carcassi, A. Capra, G. Ambu, M. Manchia, G.P. Littarru and R. Mancinelli. Optimisation of mitochondrial bioenergetic process by increased levels of metabolic factors improves motor function of skeletal, cardiac and smooth musculature. *Pflugers Archiv. European Journal of Physiology* 2001 (in press).
45. R.Vargiu, R.Mancinelli, G.L.Gessa, A.Argiolas, R.M.Scarpa, P.Usai, A.De Lisa, E.Usai. A new physiological role of vasopressin on human kidney. 52° Congresso Nazionale della Società di Fisiologia., 25-28 settembre 2001 Ancona.
46. Vargiu R., Mancinelli R., Lai M.L., Faa G., Erdas E., Daniele M. Mechanical properties of human gallbladder smooth muscle: length-tension relations. 52° Congresso Nazionale della Società di Fisiologia., 25-28 settembre 2001 Ancona.
47. Vargiu R., Lai M.L., Erdas E., Daniele G.M., Faa G., Mancinelli R. Morphological and functional differences at neck, body and fundus regions of human gallbladder. 53° Congresso Annuale della Società Italiana di Fisiologia., 16-19 settembre 2002, Ferrara.
48. Vargiu R, Daniele GM, Mancinelli R. Force-velocity-work-power relations of human gallbladder smooth muscle. 54° Riunione Società Italiana di Fisiologia. Chieti 29 settembre-2 ottobre, 2003.
49. R. Vargiu, M Fraschini, GM Daniele, GB Azzena, R Mancinelli. Fourier spectrum analysis for characterisation of spontaneous phasic movements of human gallbladder. *Acta Physiologica* 188, Suppl. 652, P441, 2004.
50. Mancinelli R, Vargiu R, Azzena GB. Intestinal nitric oxide (NO) in physiological and physiopathological conditions. *Acta Physiologica* 188, Suppl. 652, P238, 2005.
51. Vargiu R, Fraschini M, Usai P, De Lisa A, Tintrup F, Usai E, Perinu A, Azzena GB, Mancinelli R. Human ureter smooth muscle: I-mechano-energetics parameters. (57° Congresso della

- Società Italiana di Fisiologia, Ravenna, 25-27 settembre 2006*) Acta Physiologica 188, Suppl. 652, P44, 2006.
52. Frascini M, Vargiu R, De Lisa A, Usai P, Tintrup F, Usai E, Perinu A, Mancinelli R. Human ureter smooth muscle: II-myosin crossbridge kinetics. (*57° Congresso della Società Italiana di Fisiologia, Ravenna, 25-27 settembre 2006*) Acta Physiologica 188, Suppl. 652, P43, 2006.
 53. Tintrup F, Vargiu R, Perinu A, Frascini M, De Lisa A, Usai P, Usai E, Mancinelli R. Human ureter smooth muscle: III-pacemaker areas and refractoriness. (*57° Congresso della Società Italiana di Fisiologia, Ravenna, 25-27 settembre 2006*) Acta Physiologica 188, Suppl. 652, P42, 2006.
 54. Vargiu R, Faa G, Riva A, Littarru GP, Pilloni L, Fanni D, Frascini M, Perinu A, Capra A, Azzena GB, Mancinelli R. Naturally occurring substances propionyl-L-carnitine (PLC), coenzyme Q10 (CoQ10) and omega-3 fatty acids (omega-3) exert cardioreparative action on disarrayed geometry and kinetics of myosin molecular motors on BIO TO-2 cardiomyopathic Syrian hamsters. (*59° Congresso della Società Italiana di Fisiologia, Cagliari 17-19 settembre 2008*) Acta Physiologica 194, Suppl. 665, P146, 2008.
 55. Vargiu R, De Lisa A, Perinu A, Capra A, Usai E, Tintrup F, Frascini M, Mancinelli R. Mechanics and myosin cross-bridge kinetics of human ureteral smooth muscle. (*60° Congresso della Società Italiana di Fisiologia, Siena 23-25 settembre 2009*) Acta Physiologica 197, Suppl. 672, OC17, 2009.

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