

PERSONAL DATA:

Born in Rome, August 5, 1957
Nationality: Italian

ACADEMIC CURRICULUM

2004-Today: Associate Professor of Biochemistry (BIO/10) at the University of Sassari.
1983-2004: Assistant Professor of Biochemistry (BIO/10) at the University of Sassari.
August 2002 "Visiting Scientist" in Prof. Angelo M. Scamurri lab, Department of Biochemistry and Molecular Biology, University of Chicago, Chicago, IL, United States

EDUCATION

1981 Degree in Biological Science, University of Sassari, with honors

DIDACTICS ACTIVITIES

2004-date: Biochemical Methodologies (BIO/10), MSc program in Experimental and Applied Biology (LS-6 and LM-6)
2005-2012 and 2016-date: Biochemistry (BIO/10), BSc degree in Natural Sciences (L-27 and L-32)
Teacher of Applied Biochemistry (BIO/10), MSc program in LS-8 Molecular Biotechnologies
Teacher of Biochemical Methodologies (BIO/10), BSc degree in L-12 Biological Sciences
Teacher of Biochemical and Clinical Analyses (BIO/12), BSc degree in L-13 Biological Sciences
2013-2016 Teacher of Applied Biology (BIO/13), School of Medicine and School of Dentistry.
2016-date: Teacher of Biochemistry (BIO/10), BSc degree in Physiotherapy.
2018-date: Teacher of Laboratory Methods in Emergency, BSc degree in Security and International Cooperation.

2000-2010 Teacher of Natural Science Didactics (SSIS post-doc students)
2012-2015 Teacher of Natural Science Didactics (TFA I, PAS, TFA II).

2004-2010 Member of PhD School in Biomolecular and Biotechnological Sciences (curriculum: Biochemistry and Molecular Biology).
2011-2017 Member of International PhD School in Biomolecular and Biotechnological Sciences.
2013-2015 Coordinator of the curriculum "Biochemistry, Physiology and Molecular Biology" of International PhD School in Biomolecular and Biotechnological Sciences

Supervisor of several undergraduate and postgraduate students. Supervisor and mentor of six Ph.D. students.

ACADEMIC PROJECTS

2018-date: Coordinator of the BSc program in Biological Sciences and of the MSc program in Experimental and Applied Biology.
2017-date: Member of Comitato di Gestione PF24
2015-date: Local Coordinator of the National Project Piano Lauree Scientifiche (PLS) in Biology and Biotechnology.
2014-date: Local Coordinator of the MIUR-Accademia dei Lincei Project "I Lincei per una nuova didattica nella scuola: una rete nazionale".
2012-2014, Rector's Delegate for Initial Teachers Formation (TFA I, PAS, TFA II), University of Sassari
Member of several University (Students with disabilities) and Department (CPDS, AQ, Teaching Commission for BSs and MSc programs, Public Engagement, Students Orientation and Job placement) Committees.

RESEARCH TOPICS

- Biomarkers Discovery: Molecular mechanisms of cardiovascular diseases and diabetes. Identification of biomarkers by proteomics, lipoproteomics, and post translational modifications analysis.
- Matrix Biology: Glycosaminoglycans and Proteoglycans from vascular tissue, plasma, and urine: structural and functional characterization in relation to human pathophysiological conditions.
- Tissue Engineering: Biofunctionalization of polymeric scaffolds for regenerative medicine

Experience in peer reviewing

Reviewer for several scientific journals, including Journal of Molecular Medicine, Expert Review of Proteomics, Biochimica Biophysica Acta (BBA), Molecular Basis of Disease, Journal of Translational Medicine, Materials Science and Engineering B, Free Radical Biology and Medicine, Journal of Biomedical Materials Research, Journal of Chromatography A, Electrophoresis, The American Journal of Medical Sciences, Journal of Clinical Laboratory Analyses, Carbohydrate Research, Pharmaceuticals.

Lead Guest Editor of the Special Issue "LIAC Meeting on Vascular Research 2013" in Conference Papers in Science, Hindawi Publishing Corporation

RELEVANT GRANTS AND FUNDING AGENCIES

2006-2008: Excellence National project from Italian Ministry of University and Research. Scientific Coordinator of the research unit PRIN 2005 Glycosaminoglycan and proteoglycan content, distribution, and structural analysis in valve substitutes obtained from homologous and heterologous cell repopulation of acellular ECM scaffolds".
2007- National Research Project from Italian Ministry of University and Research "Development of biotechnological products for Medical Research and Diagnostics" DM28132 (MIUR approval: Decreto Dirigenziale n. 1590 27/07/2006), Distretto Tecnologico della Biomedicina e delle Tecnologie per la Salute (project P1-Action A.1). Research Scientific Coordinator of: "Characterization of markers/antibodies by confocal microscopy", activity: "Antibodies production and validation by means of proteomics, Application to Medical Research and Diagnostics"
2007-2008: Research project "Identification of plasma markers of atherosclerotic disease", Fondazione Banco di Sardegna grant
2009- Regional Funds for Scientific Research
2009-2010: Research project "Identification of inflammatory markers of atherosclerotic disease", Fondazione Banco di Sardegna grant

2009-2011: Research Scientific Coordinator of the project "Effects of modified lipoproteins on in vitro smooth muscle cells metabolism", Master and Back Regional Program
 2010 Reference researcher within the framework "2010 Visiting Professor Program".
 2011-2012: Research project "Pathogenetic mechanisms of atherosclerosis: markers of plaque instability". Fondazione Banco di Sardegna grant.
 2011-2013: Research Scientific Coordinator of the project "Proteomics of plasma lipoproteins in carotid atherosclerosis", University of Sassari.
 2013-2015: Research Scientific Coordinator of the project "Preparation of issue engineered vascular grafts. The effects of bio-active poly (L-lactic acid)-based scaffolds on "in vitro" endothelial and smooth muscle cells adhesion, proliferation and matrix deposition following different pro-inflammatory and pro-atherogenic stimuli" Regional funds for Assistant Professor position (P.O.R. SARDEGNA F.S.E. 2007-2013 – Asse IV, Action I.3.1.)
 2014-2015: Research Scientific Coordinator of the project "Lipoproteomics of plasma lipoproteins modified by inflammation mediators and by cultured smooth muscle cells", Master and Back Regional Program
 2014-2015: Research project "Lipoproteomics of plasma lipoproteins following infiltration in atherosclerotic plaque or modified by inflammation mediators and by cultured smooth muscle cells". Fondazione di Sardegna grant.
 2015 Reference researcher within the framework "2014 Visiting Scientist Project".
 2019- Research Scientific Coordinator of the project financed by Regional funds for Assistant Professor position (P.O.R. SARDEGNA F.S.E. 2007-2013 – Asse IV, Action I.3.1.)

ORGANIZATION OF MEETINGS

2013-XXIX International Meeting on Vascular Research, Sassari-Alghero.
 2009 -XXIX National Meeting of Italian Connective Tissue Society (SISC), Alghero

SOCIETIES

European Atherosclerosis Society (EAS) (2012-present)
 Latinorum Investigatorum de Arteriis Colloquium (LIAC) (2002-present); member of the scientific board.
 Italian Connective Tissue Society (SISC) (1990-present); member of the national board.
 Italian Biochemistry and Molecular Biology Society (SIBBM) (1985-present)

TOTAL NUMBER OF PUBLICATIONS: 54

TOTAL NUMBER OF CITATIONS: 732

PEER-REVIEWED PUBLICATIONS (2000-2019)

- Lepedda AJ, Nieddu G, Rocchiccioli S, Ucciferri N, Idini M, De Muro P, **Formato M**. Levels of Urinary Trypsin Inhibitor and Structure of Its Chondroitin Sulphate Moiety in Type 1 and Type 2 Diabetes. *J Diabetes Res*. Volume 2018, Article ID 9378515, 9 pages. <https://doi.org/10.1155/2018/9378515>
- Lepedda AJ, De Muro P, Capobianco G, **Formato M**. Significance of urinary glycosaminoglycans/proteoglycans in the evaluation of type 1 and type 2 diabetes complications. *J Diabetes Complications*. 2017 Jan;31(1):149-155. [impact factor 2015: 2.955]
- Carfi Pavia F, Ciappa M, Lepedda A, Fiorentino S, Rigogliuso S, Brucato V, **Formato M**, Ghersi G and La Carrubba V. A poly-L-lactic acid/collagen/glycosaminoglycan matrix for tissue engineering applications. *Journal of Cellular Plastics* 2017, 53(5):537-549. DOI: 10.1177/0021955X17695093 [impact factor 2015: 2.057]
- Langasco R, Cadeddu B, **Formato M**, Lepedda AJ, Cossu M, Giunchedi P, Pronzato R, Rassu G, Manconi R, Gavini E. Natural collagenic skeleton of marine sponges in pharmaceuticals: Innovative biomaterial for topical drug delivery. *Mater Sci Eng C Mater Biol Appl*. 2017 Jan 1;70 (Pt 1):710-720. doi: 10.1016/j.msec.2016.09.041. [impact factor 2015: 3.420]
- Lepedda AJ, Lobina O, Rocchiccioli S, Nieddu G, Ucciferri N, De Muro P, Idini M, Nguyen HQT, Guarino A, Spirito R, **Formato M**. Identification of differentially expressed plasma proteins in atherosclerotic patients with type 2 diabetes. *J Diabetes Complications* 2016 Jul;30(5):880-6. [impact factor 2015: 2.955]
- De Muro P, Capobianco G, Lepedda AJ, Nieddu G, **Formato M**, Tram NH, Idini M, Dessole F, Dessole S. Plasma PP13 and urinary GAGs/PGs as early markers of pre-eclampsia. *Arch Gynecol Obstet*. 2016 Nov;294(5):959-965. [impact factor 2015: 1.680]
- De Muro P, Lepedda AJ, Nieddu G, Idini M, Nguyen HQT, Lobina O, Fresu P, **Formato M**. Evaluation of early markers of nephropathy in patients with Type 2 Diabetes Mellitus. *Biochem Res Int*. 2016, 2016: 7497614, 6 pages. ISSN: 2090-2247
- Lepedda AJ, Zinellu A, Nieddu G, De Muro P, Carru C, Spirito R, Guarino A, Piredda F, **Formato M**. Human serum albumin Cys34 oxidative modifications following infiltration in the carotid atherosclerotic plaque. *Oxid Med Cell Longev* 2014; 2014: 690953, 7 pages. ISSN: 1942-0994 [impact factor 2012: 3.393]
- Capobianco G, De Muro P, Lepedda AJ, Dessole M, Ambrosini G, Cherchi PL, **Formato M**. Impact of first trimester fasting glycemic levels on expression of proteoglycans in pregnancy. *J Obstet Gynaecol Res*. 2014 Jun;40(6):1625-31. ISSN: 1447-0756 [impact factor 2012: 0.841]
- Lepedda AJ, Nieddu G, Zinellu E, De Muro P, Piredda F, Guarino A, Spirito R, Carta F, Turrini F, **Formato M**. Proteomic Analysis of Plasma-Purified VLDL, LDL, and HDL Fractions from Atherosclerotic Patients Undergoing Carotid Endarterectomy: Identification of Serum Amyloid A as a Potential Marker. *Oxid Med Cell Longev* 2013;2013: 385214. 11 pages. ISSN: 1942-0994 [impact factor 2012: 3.393]
- Lepedda AJ, Nieddu G, Rocchiccioli S, Fresu P, De Muro P, **Formato M**. Development of a method for urine bikunin/UTI quantitation and structural characterization: application to type 1 and type 2 diabetes. *Electrophoresis*. 2013 Dec;34(22-23):3227-33. doi: 10.1002/elps.201300384. Epub 2013 Oct 31. ISSN: 1522-2683 [impact factor 2012: 3.261]
- Lepedda AJ, Zinellu A, Nieddu G, Zinellu E, Carru C, Spirito R, Guarino A, De Muro P, **Formato M**. Protein sulfhydryl-group oxidation and mixed-disulfide modifications in stable and unstable human carotid plaques. *Oxid Med Cell Longev* 2013;2013:403973. 8 pages. ISSN: 1942-0994 [impact factor 2012: 3.393]
- De Muro P, Faedda R, Masala A, Lepedda AJ, Zinellu E, Ciccicarese M, Cossu M, Pala PG, Satta RP, **Formato M**. Kidney post-transplant monitoring of urinary glycosaminoglycans/proteoglycans and monokine induced by IFN- γ (MIG). *Clin Exp Med*. 2013 Feb;13(1):59-65. ISSN: 1591-8890 [impact factor 2012: 2.00]
- Cigliano A, Gandaglia A, Lepedda AJ, Zinellu E, Naso F, Gastaldello A, Aguiari P, De Muro P, Gerosa G, Spina M, **Formato M**. Fine structure of glycosaminoglycans from fresh and decellularized porcine cardiac valves and pericardium. *Biochem Res Int*. 2012;2012:979351. 10 pages. ISSN: 2090-2247
- Zinellu E, Lepedda AJ, Cigliano A, Pisanu S, Zinellu A, Carru C, Bacciu PP, Piredda F, Guarino A, Spirito R, **Formato M**. Association between Human Plasma Chondroitin Sulfate Isomers and Carotid Atherosclerotic Plaques. *Biochem Res Int* 2012;2012:281284. 6 pages. ISSN: 2090-2247

16. Lepedda AJ, Fancellu L, Zinellu E, De Muro P, Nieddu G, Deiana GA, Canu P, Concolino D, Sestito S, **Formato M**, Sechi GP. Urine Bikunin as a Marker of Renal Impairment in Fabry's Disease. *Biomed Res Int*. 2013;2013:205948. 9 pages. ISSN: 2314-6133 [impact factor 2012: 2.880]
17. Naso F, Gandaglia A, **Formato M**, Cigliano A, Lepedda AJ, Gerosa G, Spina M. "Differential distribution of structural components and hydration in aortic and pulmonary heart valve conduits: Impact of detergent-based cell removal". *Acta Biomater* 2010 Dec;6(12):4675-88. Epub 2010 Jul 8. ISSN: 1742-7061 [impact factor 2010: 4.822]
18. Capobianco G, de Muro P, Cherchi GM, **Formato M**, Lepedda AJ, Cigliano A, Zinellu E, Dessole F, Gordini L, Dessole S. Plasma levels of C-reactive protein, leptin and glycosaminoglycans during spontaneous menstrual cycle: differences between ovulatory and anovulatory cycles. *Arch Gynecol Obstet* 2010 Aug;282(2):207-13. Epub 2010 Mar 20. ISSN: 0932-0067 [impact factor 2010: 1.072]
19. Zinellu A, Lepedda AJ, Sotgia S, Zinellu E, Marongiu G, Usai MF, Gaspa L, De Muro P, **Formato M**, Deiana L, Carru C. Albumin-bound low molecular weight thiols analysis in plasma and carotid plaques by CE. *J Sep Sci* 2010 Jan;33(1):126-31. ISSN: 1615-9314 [impact factor 2010: 2.631]
20. Zinellu A, Lepedda AJ, Sotgia S, Zinellu E, Scanu B, Turrini F, Spirito R, Deiana L, **Formato M**, Carru C. Evaluation of low molecular mass thiols content in carotid atherosclerotic plaques. *Clin Biochem* 2009 Jun;42(9):796-801. Epub 2009 Feb 20. ISSN: 0009-9120 [impact factor 2009: 2.019]
21. Lepedda AJ, Cigliano A, Cherchi GM, Spirito R, Maggioni M, Carta F, Turrini F, Edelstein C, Scanu AM, **Formato M**. A proteomic approach to differentiate histologically classified stable and unstable plaques from human carotid arteries. *Atherosclerosis* 2009 Mar;203(1):112-8. Epub 2008 Jul 12. ISSN: 0021-9150 [impact factor 2009: 4.522]
22. De Muro P, Capobianco G, **Formato M**, Lepedda AJ, Cherchi GM, Gordini L, Dessole S. Glycosaminoglycan and transforming growth factor beta 1 changes in human plasma and urine during the menstrual cycle, in vitro fertilization treatment and pregnancy. *Fertil Steril* 2009 Jul;92(1):320-7. Epub 2008 Aug 9. ISSN: 0015-0282 [impact factor 2009: 3.970]
23. Zinellu A, Sotgia S, Usai MF, Zinellu E, Lepedda AJ, Deiana L, **Formato M**, Carru C. "Short-end injection capillary electrophoresis for quantification of plasma chondroitin sulfate isomer disaccharides". *Anal Bioanal Chem*, 2008 Aug;391(8):2865-8. Epub 2008 Jun 16. ISSN: 1618-2642 [impact factor 2008: 3.328]
24. Lepedda AJ, **Formato M**. Applications of Two-Dimensional Electrophoresis Technology to the Study of Atherosclerosis. *EJIFCC*. 2008 Dec 20;19(3):146-59.
25. Zinellu A, Pisanu S, Zinellu E, Lepedda AJ, Cherchi GM, Sotgia S, Carru C, Deiana L, **Formato M**. A novel LIF-capillary electrophoresis method for the separation of hyaluronan- and chondroitin sulfate-derived disaccharides: Application to structural and quantitative analysis of human plasma low and high charged chondroitin sulfate isomers. *Electrophoresis*, 2007 Jul;28(14):2439-47. ISSN: 0173-0835 [impact factor 2007: 3.609]
26. Zinellu A, Sotgia S, Scanu B, **Formato M**, Deiana L, Carru C. Assessment of protein-incorporated arginine methylation in biological specimens by CZE UV-detection. *Electrophoresis* 2007 Dec;28(23):4452-58 ISSN: 0173-0835 [impact factor 2007: 3.609]
27. Zinellu A, Zinellu E, Sotgia S, **Formato M**, Cherchi GM, Deiana L, Carru C. Factors affecting S-homocysteinylation of LDL apoprotein B. *Clin Chem*. 2006 Nov;52(11):2054-9. ISSN 1530-8561 [impact factor 2006: 2.41]
28. Zinellu A, Sotgia S, Zinellu E, **Formato M**, Manca S, Magliona S, Ginanneschi R, Deiana L, Carru C. Distribution of low-density lipoprotein-bound low-molecular-weight thiols: a new analytical approach. *Electrophoresis*. 2006 Jul;27(13):2575-81. ISSN: 1522-2683 [impact factor 2006: 4.18]
29. Dainese L, Barili F, Topkara VK, Cheema FH, **Formato M**, Aljaber E, Fusari M, Micheli B, Guarino A, Biglioli P, Polvani G. Effect of cryopreservation techniques on aortic valve glycosaminoglycans. *Artif Organs*. 2006 Apr;30(4):259-64. ISSN: 1525-1594 [impact factor 2006: 1.87]
30. **Formato M**, Farina M, Spirito R, Maggioni M, Guarino A, Cherchi GM, Biglioli P, Edelstein C, Scanu AM. Evidence for a proinflammatory and proteolytic environment in plaques from endarterectomy segments of human carotid arteries. *Arterioscler Thromb Vasc Biol*. 2004 Jan;24(1):129-35. ISSN: 1524-4636 [impact factor 2004: 7.432]
31. De Muro P, Fresu P, **Formato M**, Tonolo G, Mamei M, Maioli M, Sanna GM, Cherchi GM. Urinary glycosaminoglycan and proteoglycan excretion in normoalbuminuric patients with type 1 diabetes mellitus. *J Nephrol*. 2002 May-Jun;15(3):290-6. ISSN: 1724-6059 [impact factor 2002: 7.432]
32. De Muro P, Faedda R, **Formato M**, Re F, Satta A, Cherchi GM, Carcassi A. Urinary glycosaminoglycans in patients with systemic lupus erythematosus. *Clin Exp Rheumatol*. 2001 Mar-Apr;19(2):125-30. ISSN: 1593-098X [impact factor 2001: 0.93]
33. Tonolo G, Melis MG, **Formato M**, Angius MF, Carboni A, Brizzi P, Ciccarese M, Cherchi GM, Maioli M. Additive effects of Simvastatin beyond its effects on LDL cholesterol in hypertensive type 2 diabetic patients. *Eur J Clin Invest*. 2000 Nov;30(11):980-7. ISSN: 1365-2362 [impact factor 2000: 1.75]
34. Klezovitch O, **Formato M**, Cherchi GM, Weisgraber KH, Scanu AM. Structural determinants in the C-terminal domain of apolipoprotein E mediating binding to the protein core of human aortic biglycan. *J Biol Chem*. 2000 Jun 23;275(25):18913-8. ISSN 1083-351X [impact factor 2000: 6.62]

BOOK CHAPTERS:

Lepedda AJ, Zinellu E, **Formato M** (2012). Overview of Current Proteomic Approaches for Discovery of Vascular Biomarkers of Atherosclerosis. In: *Proteomics - Human Diseases and Protein Functions*. p. 3-32, Tsz-Kwong Man and Ricardo J Flores Eds, ISBN: 978-953-307-832-8 [2584 downloads]

Scanu AM, **Formato M**. Lipoprotein(a) and the Artery Wall (2007) In: Libby P De Caterina R. *Endothelial Dysfunctions in Vascular Disease* (pp. 142-149 ISBN :978-1-4051-2208-5 Blachwell Futura