**Curriculum vitae** **Dimitrios Agas**

Education:
- **Degree** in Biological Sciences (Bio-molecular module) University of Camerino (IT) (Dec 2002)
- **PhD** in Biology - University of Camerino - (September 2006)
- **PhD** in Industrial and Environmental Hygiene – University of Rome "La Sapienza" (February 2009)
- **Professional Practice State Exam** (November 2009)
- **FELASA** category C certificate (October 2010)

Actual Position: Contract Professor of Physiology – Research Fellow - University of Camerino, School of Biosciences and Veterinary Medicine

Work experience:
- Fellowship in the University of Camerino, Department of Comparative Morphology and Biochemistry for the "Preparation of primary cell cultures of rat calvarie" (March 2003)
- Fellowship from Global Italia Srl for the"Development of Methodologies pertaining to the two-dimensional electrophoresis technology" (April 2003)
- Fellowship in the University of Connecticut Health Center, Department of Medicine (Farmington CT, USA) (September 2004)
- Fellowship in the University of Connecticut Health Center, Department of Medicine (Farmington CT, USA) (December, 2004 – September, 2005)
- Fellowship in the University of Camerino, Department of Comparative Morphology and Biochemistry, for the "Refinement of the Preparation of primary cultures of osteoblasts" (October 2005)
- FELASA C Course on "Laboratory Animal Science IV" in the Biomedical Sciences Research Center Alexander Fleming, Vari (Greece) (October 2010).
- Research Fellowship from consortium IMPAT (Bologna, Italy) and University of Camerino (March 2010 – February 2011)
- Research Associate – University of Rome "La Sapieza"/University of Camerino, School of Biosciences and Biotechnology (July 2011- June 2012) Project: Novel functional pirols with anti-inflammatory activity for the realization of bioactive nanoparticles – Studies on bone diseases
- Research Fellowship – University of Camerino, School of Biosciences and Biotechnology/CureLab Oncology US (March 2013-March 2016). Project: DNA plasmid coding p62-SQSTM1 as an antiosteoporotic vaccine.

Main research activities:
- Regulation of bone remodeling and bone marrow physiology: molecular mediators and signaling pathways involved in osteoblasts-precursor and bone marrow stromal/mesenchymal stem cell homeostasis
- Stromal/mesenchymal stem cells growth and differentiation by functionalized polymers micro and nanostructured for tissue repair

Patents:
- Electroactive materials for biomedical applications. Inventors: Agas D, Marchetti L, Panero S, Sabbieti MG, Serra Moreno J Patent Number(s): IT1408988-B Published 16 Jul 2014

- Venanzi F.M., Sabbieti M.G., Agas D., Concetti A., Shifrin V., Gabai V., Sherman M., Shneider A. Title of the invention: "Methods and compositions relating to p62 for the treatment and prevention of inflammation-associated diseases" U.S. Patent Application No. 61/921, 504 filed on December 29, 2013.

Technology Transfer Activity and Grants:

- Member of Research Collaboration Agreement CureLab Oncology – University of Camerino – from 2013
- Member of selected FAR project 2012: "At the Crossroad of Autophagy and Cancer: A Signaling Hub Protein p62 / SQSTM1 as Target for Breast Cancer Immunotherapy" 2011-2012
- Selected Business Plan Spin-off Dental Bioengineering Start-up – Consorzio IMPAT –Bologna 2009
- Start Cup Umbria-Marche competition 2009 (1° prize)
- IMPAT Valorization Grant: Progetto Impresa – Consorzio IMPAT – Bologna (MElaBIO Group).
- IMPAT Valorization Grant: Progetto Impresa – Consorzio IMPAT – Bologna (O.I.D. Group).
- Project PRIN/Cofin Year 2005 protocol 2005037175-002 (Operative Unit Component).

Teaching activity in the University of Camerino:

- Main Teaching Activity:

- 2014–2015 **Physiology** module (6 CFU-42h) L-BB - BIOSCIENCES AND
- 2015–2016 BIOTECHNOLOGY L-13 (Integrate with Anatomy and Physiology) (School of Bioscience and Veterinary Medicine)
**Physiology** (6 CFU-42h) L-BB - BIOSCIENCES AND BIOTECHNOLOGY L-2 (School of Bioscience and Veterinary Medicine)

- Other Teaching Activity:

Teorical and practical laboratories in the course ***Structure and Functions of Cells and Tissues*** (Faculty of BioScience and BioTechnology, 2007-2008, 2008-2009)
Teorical and practical laboratories in the course ***Genetics and and molecular techniques in the alimentary field*** (Faculty of BioScience and BioTechnology, 2007-2008, 2008-2009)
Teorical and practical laboratories in the course ***Laboratory I & II*** (Mod. Cell Biotechnology) (School of BioScience and BioTechnology, 2010-2011, 2011-2012)
***General Biology Laboratory I*** in Laboratory I course [ ST0009] 2013-2014 Supervisor D.Agas (School of Bioscience and Veterinary Medicine)

*Expert in the field*:
***Animal Biology*** (Faculty of Pharmacy, from 2005),
***Structure and Functions of Cells and Tissues*** (Faculty of BioScience and BioTechnology, from 2008),
***Animal models and Stem Cell Biology*** (Faculty of BioScience and BioTechnology, from 2011).
***Stem Cell Technologies and Animal Models*** [ST0539] [LM-BS] (Biological Sciences-12CFU- from 2014).

- *Exam committee member*:
***Animal Biology*** (Faculty of Pharmacy, 2005-2006)
***Human Anatomy and Biology*** (Faculty of Pharmacy, 2005-2006)
***Structure and Functions of Cells and Tissues*** (Faculty of Science and Technology, 2008).
***Stem Cell Technologies and Animal Models*** [ST0539] [LM-BS] (Biological Sciences-12CFU- from 2014).

*Co-Supervisor of Master Degree Thesis in Biological Sciences (LM-6) - Molecular Diagnostics and Biotechnology*:

- "BMP2 differentially modulates FGF-2 isoform effects in osteoblasts".
- "Mouse mesenchymal stem cells differentiation on strontium-hydroxyapatite microparticles linked to chondroitin sulphate A or bone and cartilage regeneration".
- "Complexity and perplexities of proteotoxicity of adjuvants, used for DNA vaccination, in bone metabolism".
- "Aggregating protein domains affect immunity and bone homeostasis in mice
- "Plasmid DNA-coding p62: a new therapeutic approach in osteoporosis

Publications:


1. Agas D, Conceti F, Capitani M, Lacava G, Concetti A, Marchetti L, Laus F, Marchegiani A, Azevedo V, Sabbieti MG, Venanzi FM Administration of DNA Plasmid Coding Protein Aggregating Domain Induces Inflammatory Bone Loss, Curr Gene Ther. 16: 000-000 [Epub ahead of print]
2. Dubbini A, Censi R, Butini ME, Sabbieti MG, Agas D, Vermonden T, Di Martino P (2015) Injectable hyaluronic acid/PEG-p(HPMAm-lac)-based hydrogels dually cross-linked by thermal gelling and Michael addition. Eur Pol J, 72: 423-437
3. Sabbieti MG, Agas D, Capitani M, Marchetti L, Concetti A, Vullo C, Catone G, Gabai V, Shifrin V, Sherman MY, Shneider A, Venanzi FM (2015) Plasmid DNA-coding p62 as a bone effective anti-inflammatory/anabolic agent. Oncotarget, 6: 3590-3599
4. Agas D, Marchetti L, Douni E, Sabbieti MG. (2014) The unbearable lightness of bone marrow homeostasis. Cytokine Growth Factor Rev, 6: 3590-9. [Epub ahead of print]
5. Capitani M, Saade F, Havas KM, Angeletti M, Concetti F, Agas D, Sabbieti MG, Concetti A, Venanzi FM, Petrovsky N. (2014) Plasmids encoding protein aggregation domains act as molecular adjuvants for DNA vaccines. Curr Gene Ther. 3:161-169.
6. Agas D, Marchetti L, Capitani M, Sabbieti MG. (2013) The dual face of parathyroid hormone and prostaglandins in the osteoimmune system. Am J Physiol Endocrinol Metab. 10:E1185-94.
7. Sabbieti MG, Agas D, Marchetti L, Coffin DJ, Xiao L, Hurley MM (2013) BMP-2 differentially modulates FGF-2 isoform effects in osteoblasts from newborn transgenic mice. Endocrinology 154:2723-2733.
8. Agas D, Sabbieti MG, Marchetti L, Xiao L, Hurley MM. (2013) FGF-2 enhances Runx-2/Smads nuclear localization in BMP-2 canonical signaling in osteoblasts. J Cell Physiol. 228:2149-2158.
9. Agas D, Sabbieti MG, Marchetti L. (2013) Endocrine disruptors and bone metabolism. Arch Toxicol. 87:735-751.
10. Agas D, Marchetti L, Hurley MM, Sabbieti MG. (2013) Prostaglandin F2α: a bone remodeling mediator. J Cell Physiol. 228:25-9.
11. Serra Moreno J, Agas D, Sabbieti MG, Di Magno M, Migliorini A, Loreto MA. (2012) Synthesis of novel pyrrolyl-indomethacin derivatives. Eur J Med Chem. 57:391-7.
12. Serra Moreno J, Sabbieti MG, Agas D, Marchetti L, Panero S. (2012) Polysaccharides immobilized in polypyrrole matrices are able to induce osteogenic differentiation in mouse mesenchymal stem cells. J Tissue Eng Regen Med. doi: 10.1002/term.1601.
13. Sabbieti MG, Agas D, Palermo F, Mosconi G, Santoni G, Amantini C, Farfariello V, Marchetti L. (2011) 4-nonylphenol triggers apoptosis and affects 17-β-estradiol receptors in calvarial osteoblasts. Toxicology 290:334-341.
14. Sabbieti MG, Agas D, Maggi F, Vittori S, Marchetti L. (2011) Molecular mediators involved in Ferulago campestris essential oil on osteoblast metabolism. J. Cell. Biochem. 112:3742-54.
15. Sabbieti MG, Agas D, Marchetti L., Santoni G, Amantini C, Xiao L, Menghi G, Hurley MM (2010) Signaling pathways implicated in PGF2alpha effects on Fgf2+/+ and Fgf2-/- osteoblasts. J. Cell. Physiol. 224:465-474.

16. Capacchietti M, Sabbieti MG, Agas D, Materazzi G, Menghi G, Marchetti L (2009) Ultrastructure and lectin cytochemistry of secretory cells in lingual glands of the Japanese quail. Histol. & Histopathol. 24:1087-96.
17. Sabbieti MG, Agas D, Santoni G, Menghi G, Materazzi S, Marchetti L. (2009) Involvement of p53 in phthalate effects on mouse and rat osteoblasts. J. Cell. Biochem. 107:316-27.
18. Sabbieti MG, Agas D, Xiao L, Marchetti L, Coffin JD, Doetschman T, Hurley MM (2009) Endogenous FGF-2 is critically important in PTH anabolic effects on bone. J. Cell. Physiol. 219:143-51.
19. Serra Moreno J, Panero S, Materazzi S, Martinelli A, Sabbieti MG, Agas D, Materazzi G. (2009) Polypyrrole-polysaccharide thin films characteristics: Electrosynthesis and biological properties J. Biomed. Mater. Res. A 88:832-40.
20. Sabbieti MG, Agas D, Materazzi S, Capacchietti M, Materazzi G, Hurley MM, Menghi G, Marchetti L. (2008) Prostaglandin F2alpha involves heparan sulphate sugar chains and FGFRs to modulate osteoblast growth and differentiation. J. Cell. Physiol. 217:48-59.
21. Naganawa T, Xiao L, Coffin JD, Doetschman T, Sabbieti MG, Agas D, Hurley MM. (2008) Reduced expression and function of bone morphogenetic protein-2 in bones of Fgf2 null mice. J. Cell. Biochem. 103:1975-88.
22. Agas D, Marchetti L, Menghi G, Materazzi S, Materazzi G, Capacchietti M, Hurley MM, Sabbieti MG (2008) Anti-apoptotic Bcl-2 enhancing requires FGF-2/FGF receptor 1 binding in mouse osteoblasts J. Cell. Physiol. 214:145-52.
23. Agas D, Sabbieti MG, Capacchietti M, Materazzi S, Menghi G, Materazzi G, Hurley MM, Marchetti L. (2007) Benzyl butyl phthalate influences actin distribution and cell proliferation in rat Py1a osteoblasts J. Cell. Biochem. 101:543–551.
24. Naganawa T, Xiao L, Abogunde E, Sobue T, Kalajzic I, Sabbieti MG, Agas D, Hurley MM. (2006): In vivo and in vitro comparison of the effects of FGF-2 null and haplo-insufficiency on bone formation in mice. Biochem. Biophys. Res. Commun. 339: 490-498.
25. Marchetti L, Sabbieti MG, Agas D, Menghi M, Materazzi G, Menghi G, Hurley MM. (2006) PGF2$\alpha$ increases FGF-2 and FGFR2 trafficking in Py1a rat osteoblasts via clathrin independent and importin $\beta$ dependent pathway. J. Cell. Biochem. 97:1379-1392.

Book chapter:

Marchetti L., Sabbieti M.G., Agas D. (2012) Phthalate esters: bioaccumulation and intracellular signal modifications in in vivo and in vitro models. Book title - Phthalates: Chemical Properties, Impacts on Health and the Environment - In: Nova Science Publishers, Inc. (2012) ISBN: 978-1-62081-994-4

Proceedings:

I. Agas D., Sabbieti M.G., Xiao L., Naganawa T., Hurley M.M. (2005): Endogenous FGF2 is critically important in PTH induction of Bcl2, phosphorylation of CREB and Runx2 nuclear accumulation in osteoblasts. J. Bone Miner. Res. 20-9 Suppl. 1, S71

II. Agas D. Sabbieti M.G. Marchetti L. (2011) PGF2$\alpha$ activates DNA damage check-point molecules on osteoblasts. Eur. J. Histochem. 55, Suppl.1, 14

III. Sabbieti M.G., Agas D., Hurley M.M., Xiao L., Marchetti L. (2011) Runx/Smads interaction is impaired in osteoblasts from Fgf2-/- mice. Eur. J. Histochem. 55, Suppl.1, 20

IV. Marchetti L., Agas D., Sabbieti M.G. (2011) Heparan sulphate sugar chains are involved in PGF2$\alpha$ - induced osteoblast growth and differentiation mice. Eur. J. Histochem. 55 Suppl.1, 21