DARIO PEDICONI - CV

Education**:**

PhD degree (1996-1999) University of Ancona (AN), Italy
Title of thesis: ”Study of cellular respons to heavy metals of the methylotrophic yeast *Hansenula polymorpha”*
Supervisors: Dr. I Mannazzu

MSc Degree in Biological Sciences at University of Camerino (Italy) Specialisation in Procariotic Protein syntesis.
Title of master thesis: "Post-Trascriptional Regulation of *infC* operon expression in *Bacillus stearothermophilus*."
Grade obtained: 110/110 cum laude (equivalent to First Class)

High School in Scientific Studies “Liceo Scientifico Leonardo Da Vinci" Tolentino (MC), Italy

Career History:

08/2020 – 02/2021 Part-time Post-doctoral fellow in molecular biology laboratory.
Deparment of Molecular Cellular and Animal Biology. University of Camerino, Italy.
Line Managers Prof C. Renieri

02/2019 – 06/2019 Research part time contract with Arianne, International textile fiber consortium, to analyse fiber by Optical Fiber Diamater Analyzer (**OFDA**).
Line Manager: Marco Antonini

02/2012 – 05/2018 Part-time Post-doctoral fellow in molecular biology laboratory.
Deparment of Molecular Cellular and Animal Biology. University of Camerino, Italy.
Line Managers Dr. A. La Terza and Prof C. Renieri

I worked on the molecular characterization of genes involved in wool quality of Vicugna Pacos. This project involves the use of PCR with specific and degenerate primers, DIG-labelling, Northern, Southern and Western blotting, cloning et other basic molecular biology techniques.

12/2014 – 05/2017 Part-time Post-doctoral fellow in molecular biology laboratory. School of Bioscience and Veterenary Medicine. University of Camerino, Italy.
Line Managers Prof. I. Ricci

I worked on molecular characterization and genetic manipulation of F17.12 strain of *Wickerhamomyces anomalus*. This project involves the use of Random spore analysis, maiting, yeast transformation, PCR, shuttle vector construction and other basic molecular biology techniques.

06/2006 – 04/2011 Part-time Post-doctoral fellow in molecular biology laboratory. Deparment of Molecular Cellular and Animal Biology. University of Camerino, Italy.
Line Managers Dr. A. La Terza and Prof. C. Renieri

I worked on the molecular characterization of genes involved in wool colour pigmentation of Ovis aries. This project involves the use of PCR with specific and degenerate primers, DIG-labelling, Northern and Southern blotting, cloning et other basic molecular biology techniques.

05/2004 – 09/2005 Post-doctoral fellow in protein synthesis molecular biology laboratory. Molecular Cellular and Animal Biology Deparment. University of Camerino (Italy).
Line Manager Prof. C. Gualerzi

I worked on setting up a throughput in vitro yeast protein synthesis system, to identify different antimicotic molecules blocking protein synthesis at different stages. This project required the use of different biochemical and molecular biology techniques such as ion exchange, size exclusion and specific ligand chromatography, FPLC and HPLC, extraction of active ribosome and crude extrac from yeast, in vitro transcription, translation, 5`mRNA capping, tRNA charging, mutagenesis, cloning et other basic molecular biology techniques.

12/1999 – 04/2004 Post-doctoral fellow in the Pharmacological Sciences and Experimental Medicine Department, University of Camerino (Italy)
Line managers Dr. P. Pompei and Dr. M. Nabissi

The projects involved the study in rat of neuropeptide gene expression in Central Nervous System under different pharmacological treatments and conditions and the study of anti tumoral and anti-angiogenetic effects on implanted prostatic tumor in animals and on different cell lines. In this period I used different techniques: surgery, animal treatment, cell line culturing, tissue preparation (cryo-cutting of brain and non oriented tissues) for *in situ hybridization* and immuno detection of protein, microscopic analysis and a wide range of molecular biology techniques (cloning, labelling, northern etc)

12/1996 – 11/1999 PhD student in Microbial Biotecnology. Biotecnology Department University of Ancona (Italy)
Line Manager and PhD supervisor: Dr. I. Mannazzu

During these three years of my PhD. I studied the cellular responses to heavy metals of the methylotrophic yeast *Hansenula polimorpha* by means of microscopic analysis of cellular organization, protein profile by two dimensonal native gel, enzymatic assay for oxidative stress in presence of various heavy metals, mutagenesis complementation by genomic libraries and molecolar cloning techniques.

06/1995 – 11/1996 Graduate fellow in Biotecnology and Microbial Genetics. Biotecnology Department, University of Ancona (Italy)
Line Manager Prof. E. Berardi

This project was concerned with the construction of vectors for the over-expression in yeast *Hansenula polimorpha* of different peptides under inducible promoters. I used molecolar cloning thecniques as northern southern cloning etc.

08/1993 – 05/1995 Graduate fellow and part time graduate fellow. Biology Department of University of Camerino (MC) Italy
Line Manager Prof. C. Gualerzi

In this period I continued the studies (started during my master thesis) on the post-transcriptional regulation of *infC* operon expression. I generated new mutants in the initiation triplet of the second cistron and monocistronic mRNAs of the singles gene of the *infC* operon of *Bacillus stearothermophilus*. In this period I also attend to my civil service instead of military service (02/1994-02/1995)

04/1991 – 07/1993 Master in procariotic protein synthesis.
Title of master thesis: Post-Trascriptional Regulation of *infC* operon expression in *Bacillus stearothermophilus*. Biology Department of University of Camerino (MC) Italy
Line Manager Prof. C. Gualerzi

This project involved first the setting of an *in vitro* heterologous (*E. coli-B. stearothermophilus)* and homologous (*B. stearothermophilus*) translation system and the construction of mutated infc operon of *B. stearothermophilus* in the 5' UTR region and in the initiation triplet of the first of the three cistrons; second, the study of the post transcriptional regulation of *infc* mRNAs expression by different *in vitro* radioactive translation systems (heterologous and homologous).
This project involved the use of a wide range of biochemistry and molecular biology techniques such as mutagenesis, cloning, sequencing, mRNA production and purification, protein production and purification (IF3, L20 and L35) by ion exchange and size-exclusion chromatography, protein labelling in vivo and in vitro, purification of active ribosomes (both from *E. coli and B. stearothermophilus)* for in vitro translation, SDS-PAGE etc.

PERSONAL STATEMENT

During my research career I have had the privilege to undertake challenging research in different areas and organisms, from prokaryotic to eukaryotic cells, from yeast to mammalian organisms and human cell line, in a variety of projects and using diverse approaches. This has allowed me to learn a wide range of skills in cell and molecular biology, protein biochemistry, *in vitro* and *in vivo* approaches.

I have extensive experience in molecular biology and biochemistry techniques (cloning, sequencing, gene expression, RNA extraction and purification, Northern blotting, recombinant protein expression and purification using affinity chromatography and gel filtration techniques, SDS-PAGE etc), culturing, enzimatic assay, mutagenesis, transformation and manipulation of yeasts hansenula plolymorpha, saccharomyces cerevisiae and Wickerhamomyces anomalus, mammalian cell culture, *in vitro* protein synthesis in prokaryotic and eukaryotic systems. Moreover, I worked on manipulating and dissectioning rat brain to study gene expression in Central Nervous System by in situ hybridization, northern blot and immunocytochemistry, using light microscopy and image processing software. During my project working on prostatic cancer, I worked with prostatic cancer cell line PC3 in vitro and I was responsible for in vivo implantation on athymic mice prostate in order to follow tumor growth in response to several anti-cancer treatments and to study gene expression by q-PCR. In the same project I cultured HUVEC extracted directly from umbilical vein. This work was undertaken in collaboration with a biotechnology company (Biosistema srl) in an attempt to develop novel anti-cancer drugs.

In my current position I routinely order consumables and take care of store replenishment and stock-taking, as well as general laboratory maintenance. This aspect of lab management has always been part of my lab work and I have always enjoyed it and performed it with care and responsibility. Moreover, one of the many gratifying aspects of my work has always been the training and supervision of students or visitors, which I have always undertaken with enthusiasm. I am capable of working independently in conducting scientific experiments, but I also enjoy being part of a team and working together towards common goals and participating in scientific and social interactions.

Finally, I am familiar with the use of Microsoft, linux, Mac and molecular biology software and I am meticulous in keeping records of experiemental data and methods.

PUBLICATIONS

Siva Arumugam Saravanaperumal, Stefano Pallotti, **Dario Pediconi**, Carlo Renieri, Antonietta La Terza. Exon-1 Skipping and Intron-1 Retaining by Alternative Splicing of the c-KIT Gene encodes a Novel Splice Variant in the Skin of Merino Sheep (Ovis aries). **Under submission** to Molecular Biology Reports

Stefano Pallotti, Bathrachalam Chandramohan, **Dario Pediconi**, Cristina Nocelli, Antonietta La Terza & Carlo Renieri. **2020** Italian Journal of Animal Science, 19:1, 1508-1512, DOI: 10.1080/1828051X.2020.1850216

Pazzaglia I, Mercati F, Antonini M, Capomaccio S, Cappelli K, Dall'Aglio C, La Terza A, Mozzicafreddo M, Nocelli C, Pallotti S, **Pediconi D**, Renieri C. Animals (Basel). 2019 Jan 28;9(2). PDGFA in Cashmere Goat: A Motivation for the Hair Follicle Stem Cells to Activate. pii: E38. doi: 10.3390/ani9020038.

Pallotti S*, **Pediconi D***, Subramanian D, Molina MG, Antonini M, Morelli MB, Renieri C, La Terza A. Evidence of post-transcriptional readthrough regulation in FGF5 gene of alpaca. *Gene*. **2018** Jan 4. pii: S0378-1119(18)30006-4. doi: 10.1016/j.gene.2018.01.006.
*These authors contributed equally to this work

Stefano Pallotti, Antonietta La Terza, Attilio De Cosmo, **Dario Pediconi**, Irene Pazzaglia, Cristina Nocelli & Carlo Renieri. Genetic variability of the short-haired and rough-haired Segugio Italiano dog breeds and their genetic distance from the other related Segugio breeds, I*talian Journal of Animal Science*, **2017** 16:4, 531-537, DOI: 10.1080/1828051X.2017.1317221

Bozic J, Capone A, **Pediconi D**, Mensah P, Cappelli A, Valzano M, Mancini MV, Scuppa P, Martin E, Epis S, Rossi P, Favia G, Ricci I. Mosquitoes can harbour yeasts of clinical significance and contribute to their environmental dissemination. *Environ Microbiol Rep.* 2017 Oct;9(5):642-648. doi: 10.1111/1758-2229.12569. Epub **2017** Jul 21.

Siva Arumugam Saravanaperumal, **Dario Pediconi**, Carlo Renieri and Antonietta La Terza Alternative splicing of the sheep MITF gene: Novel transcripts detectable in skin. *Gene*. **2014;** 552(1):165-75.

Siva Arumugam Saravanaperumal, **Dario Pediconi**, Carlo Renieri and Antonietta La Terza Skipping of Exons by Premature Termination of Transcription and Alternative Splicing within Intron-5 of the Sheep SCF Gene: A Novel Splice Variant. *Plose One* Epub **2012**; 7(6): e38657.

Pediconi D., Martarelli D., Fontanazza A., Pompei P. Effects of losartan and irbesartan administration on brain angiotensinogen mRNA levels.
Eur J Pharmacol. **2005**; 528(1-3): 79-87.

Martarelli D., Martarelli B., **Pediconi D.**, Nabissi M.I., Perfumi M., Pompei P. Hypericum perforatum methanolic extract inhibits growth of human prostatic carcinoma cell line orthotopically implanted in nude mice. *Cancer Lett.* **2004**; 210: 27-33.

Pompei P., Cavazzuti E., Martarelli D., **Pediconi D**., Arletti R., Lucas L.R., and Massi M. Preprotachykinin-A mRNA gene expression after administration of 3,4 methylendioxymetamphetamine (Ecstasy). *Eur. J. Pharmacol.* **2002**; 245: 450 (3)

Pompei P., Severini R., **Pediconi D.**, Angeletti M., Eleuteri A., Fattoretti P., Bertoni-Freddari C., Fioretti E. Regulation of Preprotachykinin-A mRNA gene expression in an animal model of Alzheimer's disease. *J. Histochem. Cytochem*. **2001**; 49(11): 1469-70.

Pompei P., Severini R., **Pediconi D.**, Martarelli D., Massi M., Fattoretti P., Bertoni-Freddari C. In situ hybridization analysis of preprotachykinin-A mRNA levels in young and old rats. *J. Histochem. Cytochem.* **2001**; 49(10): 1325-6.

Mannazzu I., Ferretti R., Guerra E., **Pediconi D**., and Fatichenti F. Vanadate and Copper induce overlapping oxidative stress responsens in the vanadate-tolerant yeast *Hansenula polymorpha. Biochim Biophys Acta*. **2000**; 1475(2): 151-6.

Mannazzu I., Guerra E., Strabbioli R., **Pediconi D.**, Berrie C.P. and Fatichenti F. "Recovery from vanadium involves the elimination of cellular structures in the yeast *Hansenula polymorpha*. *Food technol. Biotechnol*. **1998**; 36 (4): 299-303

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The vanadate-tolerant yeast *Hansenula polymorpha* undergoes cellular reorganization during growth in, and recovery from, the presence of Vanadate. *Microbiology* **1998**; 144: 2589-2597

Pediconi D., Spurio R., La Teana A., Jemiolo D., Gualerzi C.O. and Pon C.L. "Translational regulation of *infC* operon in *Bacillus stearothermophilus*" *Biochem.cell Biol.* **1995**; 73: 1071-1078