



## **MIRKO BAGLIVO – Medical Biotechnologies<sup>ONB qualified</sup> Master Degree**

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### **SUMMARY**

My keen interest in medical sciences and research drove me to pursue a university career by moving first to Parma and then to Rome, where I finished my studies obtaining a master's degree in Medical Biotechnology with bioengineering curriculum. During my studies, I had the opportunity to carry out traineeships in public hospital facilities and research institutes. I achieved the national qualification to the profession of biologist (ONB), and then I had two years of working experience as a researcher, joining a biomedical research and diagnostic company, which operates in the field of rare and genetic diseases. After that, I had worked as a teacher in a high school. Currently I am a PhD student at MedILS in Split, Croatia, where I also attend Translational Research in Biomedicine (TRIBE) PhD program within the University of Split.

### **PROFESSIONAL EXPERIENCE**

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#### **11/2020 – on going**

##### **PhD student at the Mediterranean Institute for Life Sciences (MedILS)**

I work on cellular parabiosis in the "Biology of Robustness" group under mentorship Dr. Katarina Trajkovic. I also attend Translational Research in Biomedicine (TRIBE) PhD program at the University of Split.

#### **09/2020 – 11/2020**

##### **Biology and Anatomy teacher at "Estetica Cazzato scuola di formazione professionale" a private high school of professional education in Tricase**

I taught in a classroom the basics of anatomical science and biology in Italian language for a total of 44 hours in two months. Italian ministry of education recognized my teaching.

#### **08/2018 – 08/2020**

##### **Biologist researcher for the Magi Euregio company, medical genetics laboratory - via Porto San Felice, 23 - 25010 San Felice del Benaco (BS)**

I worked in the field of research relating to genetic and rare diseases, including juvenile-onset and inherited metabolic disorders, lymphatic system disorders, autoimmune diseases, infertility, degenerative and nervous system diseases, taking part in the laboratory (ISO-9001 and GMP certified) of MAGI laboratories, also following the development of ideas for the drafting of a research project. In detail, I dealt with:

- molecular biology techniques for: genetic analysis, through DNA, RNA and protein extraction from cell lines, blood, saliva, biopsies and formalin samples; quantification of nucleic acid and protein; amplification by different PCR methods and related purification of the PCR products; Elisa assay, western-blot and related reading and interpretation of results; Sanger sequencing and Next Generation Sequencing. These procedures aim to functional studies of the variants identified in patients with genetic disease, from sequencing analysis of the patient samples to characterization of experiments performed *in vitro*;
- cellular biology techniques for: preparation of VEQ system starting from culture of mutated, primary or immortalized fibroblast lines; single culture and co-culture of leukemia, endothelial and lymphatic endothelial cell lines aim to construction of experimental models for *in vitro* studies of biomolecular mechanisms, such as inflammation, differentiation, proliferation and cell death, implicated in different rare and genetic disease; neuronal cell culture for *in vitro* identification of molecular target implicated in Parkinson disease; isolation and culture of fibroblast derived from patients biopsies; treatment and induction of cell lines with different kind of pharmacological molecules with aim of functional studying; cell counting, colorimetric viability assay and ROS dosage; optical and fluorescent microscopy, preparation of samples on slides and histological coloration; coordination of cell biology environments sterilization according to GMP;
- software and databases management for the processing of sequencing results, the study of the identified gene variants, primer design, alignment and the gene expression study, the reading and interpretation of the Sanger electropherograms and the related introduction of genetic information in the company app for the management of laboratory data;
- study of segregation and analysis of epigenetics alterations, polymorphisms and identified genetic variants, also working in collaboration with some geneticists, clinicians and bioinformaticians for data processing, aims the purpose of diagnostic reporting and/or the preparation of clinical research results;
- planning of the purchase of materials and reagents for the laboratory activities, the study and planning of research projects, the conduction of experiments and clinical trials and the writing of reports on researches, experimental results and company meetings;
- the writing of scientific papers as a co-author and corresponding author, coordinating the articles submission. I also attended conferences in Italy and abroad as a viewer and as a speaker for the presentation of the company results.

#### **11/2016 - 10/2017**

##### **Trainee at the Department of Medicines – Italian Higher Institute of Health - Viale Regina Elena, 299 - 00161 Rome**

I have been involved in laboratory activities in the field of experimental research on autophagy and cell death mechanisms, involved in different contexts such as oncocardiogenesis, glioblastoma multiforme and differential expression studies in gender medicine. Performed activities:

- molecular biology techniques such as extraction, determination, purification and characterization of DNA, RNA and protein from human and animal biopsies, western-blot and electrophoretic methods;
- cellular biology techniques, cell culture of HeLa, cancer stem cells (glioblastoma) and primary fibroblast cell lines, cell counting, Cytofluorimeter, FRET, FACS, clonogenesis, *in vitro* pharmacological induction; optical and fluorescent microscopy;
- elaboration and planning of the experiments for the study of the molecular mechanisms, such as autophagy, cell death, necrosis, necroptosis and ferroptosis, involved in the chemotherapy resistance of glioblastoma multiforme stem cells to temozolomide;

- planning of research projects and drafting of scientific articles, also making a graphic contribution by creating scientific illustrations; processing and interpretation of the results; management of laboratory spaces and maintenance of sterility conditions in environments dedicated to cell culture.

## **02/2014 - 08/2014**

**Trainee at the Tissue Typing, Cryobiology and Regenerative Medicine laboratory of the Spallanzani Institute - Santa Maria Nuova Hospital - Via del Risorgimento, 80 - Reggio Emilia**

I have personally followed laboratory activities to produce Regenerative Medicine products from blood components for non-transfusion use and for the HLA tissue typing. I performed tasks such as:

- manipulation of hematic components under sterility conditions for the production of Platelet Rich Plasma (PRP) destined to orthopedic use; all activities were carried out according to the ISO quality standards that certify the SIMT laboratories; automatized Complete blood count (CBC), recording and interpretation of the results;
- molecular biology activity for Tissue Typing (extraction of DNA from fresh and frozen blood samples, amplification, PCR techniques, SSP with agarose gel electrophoresis and SSO techniques with the use of the Mr.Spot® tool); interpretation of tests and results; processing and storage of the tissue typing results through hospital procedures;
- recording of the activities carried out using the hospital traceability informatics technology systems.

## **EDUCATION**

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**2020 Acquisition of the 24 CFU for enabling to teaching in school**

**2018 National Qualification from National Order of Biologist to exert profession of Biologist - University of Torvergata - Rome - A Section**

**2017 Master's Degree in Medical Biotechnologies (LM-9), Bioengineering curriculum - University of Rome "La Sapienza" – Grad. mark 107/110**

Specific scientific skills in the biotechnological-medical field and knowledge related to Bioethics, Clinical Trials, Bioengineering, Bioinformatics, Biomaterials, Telemedicine and Surgical Biotechnologies

Master's degree thesis: *"Study of the resistance mechanisms and cell death in the chemotherapy treatment with Temozolomide of glioblastoma multiforme stem cell lines"*

**2015 Bachelor's Degree in Biotechnologies (L-2) - University of Parma**

Basic scientific skills in the Biotechnological field.

Degree thesis: *"Use of platelet concentrate in regenerative ophthalmology"*

**2010 Chemical-biological technician-patricians expert Diploma - "Don Tonino Bello" secondary educational higher institute in Tricase**

Short experience in a chemical-biological and microbiological laboratory.

Tesina di maturità: *"Le Bioteconologie nel trattamento delle acque reflue"*

## **TECHNICAL SKILLS**

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**Molecular biology:** extraction, manual (Quiagen®, Flexigen®, Tempus®, Fastgene®, Invitrogen®) and automatized (Magpurix®); **quantification** (Qubit®, Tecan® e Nanodrop®); **amplification** by different application of PCR methods such as SSP and SSO (Mr.Spot®), long, touchdown and quantitative RealTime (Thermofisher®); **purification** (Fastgene®, Gentra®, ExoProStar®); **Elisa assay** (Biotechn®, Tecan®); **western-blot** (BioRad-TransBlot®, GeneGnome®, Chemidoc®); **Sanger sequencing** (Beckman-GeXP®) and **Next Generation Sequencing** (Illumina®).

**Cellular biology:** **fibroblast** (Coriell® e da paziente), **leukemia** (HL60), **endothelial** (HUVEC), **lymphatic endothelial** (LECs), **neuronal** (SH-SY-5Y e SK-N-SH), **cancer cells** and **cancer stem cells** commercial (HeLa) or from *ex vivo* isolation (glioblastoma e neuroblastoma). Preparation and expansion of cell cultures in different conditions (single, co-culture in transwell, on matrigel, in hypoxia and in electromagnetic fields); colorimetric methods for the evaluation of cell viability (MTT®, Tecan®) ROS dosage (Promega®, Tecan®); histological coloration techniques (Giemsa® and Trypan blu); cell counting (Burker e Neubauer); optical and fluorescent microscopy.

## **LANGUAGES**

**Italian** Native speaker

**English B1** Comprehension, writing and speaking

## **CERTIFICATIONS**

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**Drive Licence B** (own car)

**ECDL** European Licence

**National Order of Biologist Subscription** n°: AA\_082467

## **SOFTWARES AND OTHER INTERESTS**

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- Office Pack (ECDL), Adobe Pack (Photoshop, Illustrator, Premiere, AfterEffect, InDesign), Fiji ImageJ, WordPress;
- Guitar player, travel, web, graphic & web design, sports (team and individual), astronomy, artwork, photography e scientific dissemination (Missionescienza.it).

## SCIENTIFIC PUBLICATION

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1. Ricci M, Serrani R, Amato B, Compagna R, Veselenyiova D, Kenanoglu S, Kurti D, **Baglivo M**, Krajcovic J, Miggiano GAD, Aquilanti B, Matera G, Velluti V, Gagliardi L, Dundar M, Basha SH, Bertelli M.  
*CYP26B1 and its implications in lymphangiogenesis: Literature review and study of rare variants in two families.*  
Lymphology. 2020;53(1):20-28. PMID: 32521127.
2. **Baglivo M**, Baronio M, Natalini G, Beccari T, Chiurazzi P, Fulcheri E, Petralia PP, Michelini S, Fiorentini G, Miggiano GA, Morresi A, Tonini G, Bertelli M.  
*Natural small molecules as inhibitors of coronavirus lipid-dependent attachment to host cells: a possible strategy for reducing SARS-COV-2 infectivity?*  
Acta Biomed. 2020 Mar 19;91(1):161-164. doi: 10.23750/abm.v91i1.9402. PMID: 32191676.
3. Precone V, Paolacci S, Beccari T, Dalla Ragione L, Stuppia L, **Baglivo M**, Guerri G, Manara E, Tonini G, Herbst KL, Unfer V, Bertelli M.  
*Pheromone receptors and their putative ligands: possible role in humans.*  
Eur Rev Med Pharmacol Sci. 2020 Feb;24(4):2140-2150. doi: 10.26355/eurrev\_202002\_20394. PMID: 32141584.
4. Bertelli M, Kiani AK, Paolacci S, Manara E, Kurti D, Dhuli K, Bushati V, Miertus J, Pangallo D, **Baglivo M**, Beccari T, Michelini S.  
*Hydroxytyrosol: A natural compound with promising pharmacological activities.*  
J Biotechnol. 2020 Feb 10;309:29-33. doi: 10.1016/j.jbiotec.2019.12.016. Epub 2019 Dec 26. PMID: 31884046.
5. **Baglivo M**, Martelli F, Paolacci S, Manara E, Michelini S, Bertelli M.  
*Electrical Stimulation in the Treatment of Lymphedema and Associated Skin Ulcers.*  
Lymphat Res Biol. 2020 Jun;18(3):270-276. doi: 10.1089/lrb.2019.0052. Epub 2019 Nov 20. PMID: 31730410.
6. **Baglivo M**, Dassati S, Krasi G, Fanelli F, Kurti D, Bonelli A, Arabia G, Fabbicatore D, Muneretto C, Bertelli M.  
*Atrial septal defects, supra-aortic stenosis and syndromes predisposing to aneurysm of large vessels.*  
Acta Biomed. 2019 Sep 30;90(10-S):53-57. doi: 10.23750/abm.v90i10-S.8760. PMID: 31577255; PMCID: PMC7233642.
7. Krasi G, Bushati V, Precone V, Cortese B, Agostini F, Tezzele S, **Baglivo M**, Cecchin S, Aquilanti B, Velluti V, Matera G, Gagliardi L, Miggiano GAD, Bertelli M.  
*Monogenic hyperlipidemias.*  
Acta Biomed. 2019 Sep 30;90(10-S):47-49. doi: 10.23750/abm.v90i10-S.8757. PMID: 31577253; PMCID: PMC7233650.
8. Precone V, Beccari T, Stuppia L, **Baglivo M**, Paolacci S, Manara E, Miggiano GAD, Falsini B, Trifirò A, Zanlari A, Herbst KL, Unfer V, Bertelli M; Geneob Project.  
*Taste, olfactory and texture related genes and food choices: implications on health status.*  
Eur Rev Med Pharmacol Sci. 2019 Feb;23(3):1305-1321. doi: 10.26355/eurrev\_201902\_17026. PMID: 30779105.
9. Ricci M, Amato B, Barati S, Compagna R, Veselenyiova D, Kenanoglu S, Stuppia L, Beccari T, **Baglivo M**, Kurti D, Krajcovic J, Serrani R, Dundar M, Basha SH, Chiurazzi P, Bertelli M.  
*Two rare PROX1 variants in patients with lymphedema.*  
Mol Genet Genomic Med. 2020 Aug 5:e1424. doi: 10.1002/mgg3.1424. Epub ahead of print. PMID: 32757260.
10. Michelini S, Chiurazzi P, Marino V, Dell'Orco D, Manara E, **Baglivo M**, Fiorentino A, Maltese PE, Pinelli M, Herbst KL, Dautaj A, Bertelli M.  
*Aldo-Keto Reductase 1C1 (AKR1C1) as the First Mutated Gene in a Family with Nonsyndromic Primary Lipedema.*  
Int. J. Mol. Sci. 2020, 21, 6264. doi.org/10.3390/ijms21176264