



Alessandra Lo Bianco

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I am a medical biotechnologist who has experience with leukemia cell culture, biochemistry/protein biology and gene expression analyses. During the last year I started working in Professor Lavecchia's Drug Discovery Lab and I was able to quickly learn how to apply computational approaches to drug discovery. Using various programs and algorithms, I performed ligand-based and structure-based experiments, molecular dynamics simulation and data analysis. I'm responsible, resourceful, persistent, well-organized, detail-oriented, willing to learn new techniques and I have great note and record keeping skills. Moreover, I have a keen interest in biomedical research and I am determined to pursue a career in academia.

RESEARCH EXPERIENCE

- June 2020 – Present **Research Assistant in Computational Chemistry** in Prof. Lavecchia's Lab, Department of Pharmacy, University of Naples "Federico II".
- Various research projects concerning the discovery of novel drugs targeting PPAR γ , Laminin-1 Receptor, Human purine nucleoside phosphorylase (HsPNP) and therapeutics acting against SARS-CoV-2.
- July 2018 – Feb. 2020 **Research Traineeship in Molecular Biology** in Prof. Grosso's Lab, Department of Molecular Medicine and Medical Biotechnology, University of Naples "Federico II".
- Main research project on the functional characterization of miR-1202 regulating the expression of the human transcriptional factor GATA-1 in Down Syndrome Myeloid Leukemia.
- Feb. 2017– May 2017 **Research Traineeship in Biochemistry** in Prof. Russo's Lab, Department of Pharmacy, University of Naples "Federico II".
- Small research project on the establishment of p53 -/- lung cancer cells resistant to 5-Fluorouracil.

EDUCATION AND TRAINING

- 25.01.20 – 29.01.20 **Virtual EMBL Course.** "Exploratory Analysis of Biological Data: Data Carpentry". Course consisting in the use of R programming to handle and analyze data. (1 week)
- Dec. 2017 – Apr. 2020 **Master's Degree in Medical Biotechnology**, University of Naples "Federico II". Weighted GPA: 28.2/30. Thesis in Molecular Biology "*MiR-1202 regulates expression levels of the hematopoietic transcription factor GATA-1 in down syndrome patients with myeloproliferative disorders*" (Tutor Prof. M. Grosso). Graduation date: April 7, 2020. Grade of degree 110/110 cum laude.
- Feb. - July 2019 **Advanced course** in "Cytogenetics and Cytogenomics", University of Naples "Federico II", Department of Molecular Medicine and Medical Biotechnology. 1-week Traineeship in Professor Nitsch Laboratory. (300 hours)
- Sept. 2014 – Dec. 2017 **Bachelor's degree in Biotechnologies for Health**, University of Naples "Federico II". Weighted GPA: 28.9/30. Thesis in Biochemistry, "*Establishment of p53 -/- lung cancer cells resistant to 5-Fluorouracil.*" (Tutor Prof. G. Russo). Graduation date: December 20, 2017. Grade of degree 110/110 cum laude.
- Sept. 2009 – Jul. 2014 **High school diploma "Francesco Severi"** (scientific studies). Final grade: 100/100.

RESEARCH SUPERVISION

- **Supervisor** of 5th year Pharmacy Student, Dept. of Pharmacy, University of Naples “Federico II” (Naples, Italy), **November 2020 – Present**: Research project consisting in the identification of novel inhibitors of the human 5-lipoxygenase (5LOX) and the 5-lipoxygenase-activating protein (FLAP), using computational chemistry approaches such as molecular dynamics and structure-based virtual screenings.
- **Supervisor** of Graduate Biology Student, Dept. of Molecular Medicine and Medical Biotechnology, University of Naples “Federico II” (Naples, Italy), **May 2020 – Present**: Research project concerning the identification of miR-1202 promoter using bioinformatic approaches and setup of a systematic workflow for the identification of miRNA promoters.

SKILLS OVERVIEW

MOLECULAR BIOLOGY LABORATORY

Molecular Biology:	PCR, cDNA synthesis, qPCR, cloning, RNA isolation/purification, luciferase assay, RNAi
Biochemistry:	Nuclear protein extractions, protein quantification, western blotting
Cell Culture:	Leukemic cell lines, cell transfections (lipofection, electroporation)
Bacteria:	Culture, transformation, plate preparation, maxiprep, midiprep, miniprep
Specific software:	ImageJ.

COMPUTATIONAL CHEMISTRY

Ligand-Based Virtual Screening (Fingerprints-based and substructure-based similarity search, hierarchical and scaffold clustering); Structure-Based Virtual Screening (Molecular docking); Molecular Dynamics (MD).
Programs: Schrödinger Package, PyMOL, CCDC Package, Chimera, LigPlot+, Scaffold Hunter, ChemDraw.

BIO-STATISTICS

GraphPad.

SCIENTIFIC ILLUSTRATIONS

Adobe Illustrator, Vectornator, Inkscape, power point.

PUBLICATIONS

1. K. Tilekar, J.D. Hess, N. Upadhyay, **A. Lo Bianco**, M. Schweipert, A. Laghezza; F. Loiodice, F.J. Meyer-Almes, R. Aguilera, A. Lavecchia, C S, Ramaa; “*Thiazolidinedione ‘magic bullets’ simultaneously targeting PPAR γ and HDACs: Design, synthesis and investigations of their in vitro and in vivo antitumor effects*”; submitted to the Journal of Medicinal Chemistry, **May 2021**.
2. S. Trombetti, E. Cesaro, R. Catapano, R. Sessa, **A. Lo Bianco**, P. Izzo, M. Grosso; “*Oxidative Stress and ROS-Mediated Signaling in Leukemia: Novel Promising Perspectives to Eradicate Chemoresistant Cells in Myeloid Leukemia*”; International Journal of Molecular Sciences; **February 2021**.
3. M. Rabuffetti⁺; F. Rinaldi⁺; **A. Lo Bianco**⁺; G. Speranza; D. Ubiali; M. Cristina de Moraes; L. C. Rodrigues Pereira da Silva; G. Massolini; E. Calleri; A. Lavecchia; “*Discovery of a novel inhibitor of human purine nucleoside phosphorylase by a simple hydrophilic interaction liquid chromatography (HILIC-UV) enzymatic assay*”; ChemMedChem; **December 2020**.
4. A. Bhattacharya, A. Izzo, N. Mollo, F. Napolitano, A. Limone, F. Margheri, A. Mocali, G. Minopoli, **A. Lo Bianco**, F. Di Maggio, V. D’Argenio, N. Montuori, A. Lavecchia and D. Sarnataro; “*Inhibition of 37/67kDa Laminin-1 Receptor Restores APP Maturation and Reduces Amyloid- β in Human Skin Fibroblasts from Familial Alzheimer’s Disease*”; Journal of Personalized Medicine, **November 2020**.
5. M. De Martino, R. Sessa, M.R. Storino, M. Giuliano, S. Trombetti, P. Izzo, R. Catapano, **A. Lo Bianco**, M. Grosso; “*Transcriptional repressors of fetal globin genes as novel therapeutic targets in beta-thalassemia*”; Chapter of Book “Beta Thalassemia”, InTechOpen, **January 2020**.

ABSTRACTS AND POSTER PRESENTATIONS

1. K. Tilekar, J. D. Hess, N. Upadhyay, **A. Lo Bianco**, M. Schweipert, A. Laghezza, F. Liodice, F. Meyer-Almes, R. J. Aguilera, A. Lavecchia, and Ramaa C S; “*Thiazolidinedione “Magic Bullets” Simultaneously Targeting PPAR γ and HDACs: Design, Synthesis, and Investigations of their In Vitro and In Vivo Antitumor Effects*”. Poster presentation will be delivered at the 8th EFMC Young Medicinal Chemists’ Symposium. Virtual Event. **September 2021**.
2. **A. Lo Bianco**, R. Sessa, S. Trombetti, R. Catapano, M. D’Armiento, P. Izzo, M. Grosso; “*miR-1202 regola l’espressione del fattore trascrizionale ematopoietico GATA-1 in cellule mieloidi*”; Abstract submitted at Giornate Scientifiche della scuola di Medicina e Chirurgia, Farmacia e Biotecnologie organized by University of Naples “Federico II”, event to be rescheduled to a future date due to COVID-19. I’ve also been selected for a podium presentation.
3. **A. Lo Bianco**, R. Sessa, S. Trombetti, R. Catapano, P. Izzo, M. Grosso; “*miR-1202 regulates expression levels of the hematopoietic transcription factor GATA-1 in myeloid cells*”; Poster presentation delivered at The Non-Coding Genome EMBO/EMBL Symposium. Heidelberg, Germany, **October 2019**.
4. S. Trombetti, **A. Lo Bianco**, R. Sessa, R. Catapano, P. Izzo, M. Grosso; “*A putative role of miR-1202 deregulation in TMD-DS*”; Poster presentation delivered at the 3th Congress on Down Syndrome organized by Department of Molecular Medicine and Medical Biotechnology (University of Naples “Federico II”). Naples, Italy, **October 2019**.
5. S. Trombetti, R. Sessa, M. Miranda, R. Capatano, **A. Lo Bianco**, M. Caballero Cavallè, P. Izzo, M. Grosso; “*Role of GATA-1 isoforms on the production and compartmentation of reactive oxygen species (ROS) in the myeloid leukemia cell line K562*”; Poster presentation delivered at the 60th Annual Italian Society of Biochemistry and Molecular Biology (SIB) Congress. Lecce, Italy, **September 2019**.
6. S. Trombetti, R. Sessa, M. Miranda, R. Capatano, **A. Lo Bianco**, M. Caballero Cavallè, P. Izzo, M. Grosso; “*Is quercetin able to revert the apoptotic resistance triggered by the short isoform of GATA-1 in myeloid leukemia cells?*”; Poster presentation delivered at the 24th Annual European Hematology Association (EHA) Congress. Amsterdam, Netherlands, **June 2019**.
7. S. Trombetti, R. Sessa, M. Miranda, R. Capatano, **A. Lo Bianco**, M. Caballero Cavallè, P. Izzo, M. Grosso; “*Quercetin is able to revert the apoptotic resistance triggered by the short isoform of GATA-1 in myeloid leukemia cells*”; Poster presentation delivered at the 2th Italian Society of Biochemistry and Molecular Biology (SIB) BIO/10 Workshop. Naples, Italy, **May 2019**.

SCOLARSHIPS AND GRANTS

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| Jen. 2021 – Sept. 2021 | Winner of Research Grant (9 months) for a position of research assistant in Professor Lavecchia’s laboratory, University of Naples “Federico II”, Naples, Italy. Grant code: FARM/BS/21/2020, offered by University of Naples “Federico II”. |
| June 2020 – Aug. 2020 | Winner of Research Grant (3 months) for a position of research assistant in Professor Lavecchia’s laboratory, University of Naples “Federico II”, Naples, Italy. Grant code: CUP B63D18000520007, offered by Campania region. |
| Jul. 2019 | Winner of Erasmus Traineeship Studentship at the University of Salford, Manchester, UK. System Biology Project with Professor Damanacos. Erasmus annulled due to COVID-19 pandemic. |
| Oct. 2018 – Mar. 2020 | Winner of Annual Institute for Research and Educational Activities (I.P.E. Istituto Per Ricerche Ed Attività Educative) Studentship for “Villalta” College accommodation, Naples, Italy. |
| 2015 – 2019 | Winner of Annual Italian Institute of Social Security (INPS, Istituto Nazionale della Previdenza Sociale) Studentship, Italy. |

LANGUAGES AND DIGITAL SKILLS

Italian: Mother tongue **English:** 7.5 or C1 (IELTS Test, April 23rd, 2021)

Excellent knowledge of Microsoft Office package.

PROFESSIONAL ASSOCIATIONS

- European Society for Medical Oncology, ESMO (January 2021 – Present)
- AIRCerca, International Association of Italian Researchers (November 2019 – Present)

VOLUNTEER OR LEADERSHIP EXPERIENCE

- **Fundraiser for AIRC** - The Italian Foundation for Cancer Research (**October 2020**).
- **Volunteer** for Environment Association “Voglio un mondo pulito”, Salerno, Italy, **July 2019 – Present**.
- **Speaker** at the meeting “Science Communication in biomedical field”, Villalta College, **October 2019**.

OTHER ACTIVITIES AND TRAINING COURSES

- Jul. 2020 – Aug. 2020 Online Course on **Drug Discovery** (University of California San Diego, offered through Coursera)
- Apr. 2020 – May 2020 Online Course on **How to Write and Publish a Scientific Paper** (École Polytechnique, offered through Coursera), 9 hours.
- Mar. 2019 – May Course on **Soft Skills**, IPE (Napoli), 30 hours.
- 23 Feb. 2019 Course on Hazard Analysis and Critical Control Points (**HACCP**), Parise Group (Napoli), 8 hours.
- Oct. - Dec. 2018 Course “**Startup**” IPE (Napoli), 40 hours.

INTERESTS AND SOFT SKILLS

Hiking. TV shows. Photography. Volleyball. Plays the oboe. Music school for 7 years. Solfeggio diploma. Winner of national musical competition “Zangarelli” with Middle school orchestra in 2009.