

## Curriculum Vitae

### **Alessandra MURABITO, Ph.D.**

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Born in Torino- Italy, May 4th, 1993.

### **WORK EXPERIENCE**

- December 2022- ongoing:  
Temporary Research Fellow holding an ECFS / CFE Post-doctoral research fellowship. Research on the thesis: “Exploiting a PI3K $\gamma$  Mimetic Peptide to Restore CFTR Localization at the Plasma Membrane”. Supervisor: Professor Alessandra Ghigo.  
University of Torino, Molecular Biotechnology Center, Department of Molecular Biotechnology and Health Sciences, Torino, Italy
- April 2022- November 2022:  
Temporary Research Fellow. Research on the thesis: “Development of a PI3K $\gamma$  mimetic peptide for the treatment of Cystic Fibrosis”. Supervisor: Professor Alessandra Ghigo.  
University of Torino, Molecular Biotechnology Center, Department of Molecular Biotechnology and Health Sciences, Torino, Italy
- February 2022 – ongoing:  
Scientific Collaborator for Kither Biotech S.r.l. Via Nizza 52, 10126 Torino (TO), Italy
- October 2021 – March 2022:  
Temporary Research Fellow. Research on the thesis: “Molecular targeting of COPD and Bronchiectasis during aging, a PI3K $\gamma$ -derived peptide”. Supervisor: Professor Emilio Hirsch.  
University of Torino, Molecular Biotechnology Center, Department of Molecular Biotechnology and Health Sciences, Torino, Italy
- September 2019:  
Visiting Ph.D. Student at the Institute of Biochemistry and Cell Biology (IBBC), National Research Council (CNR), Naples, Italy. Supervisor: Professor Alberto Luini. Research interest: Characterization of the molecular mechanisms underlying PI3K $\gamma$ -mediated regulation of CFTR trafficking
- 2014 – 2017:  
Trainee as Bachelor Student and Master Student.  
University of Torino, Molecular Biotechnology Center, Department of Molecular Biotechnology and Health Sciences, Torino, Italy

### **EDUCATION**

- 2017 – 2022:  
Ph.D. in Biomedical Science and Human Oncology – Specialization in Functional Genomics applied to Translational research. Research on the thesis “Targeting the AKAP function of PI3K $\gamma$  for the treatment of obstructive airway diseases”. Supervisor: Professor Alessandra Ghigo.  
University of Torino, Molecular Biotechnology Center, Department of Molecular Biotechnology and Health Sciences, Torino, Italy

## Curriculum Vitae

- 2015 – 2017:  
Master Degree in Molecular Biotechnology (Final Mark: 110/110 summa cum laude and recommendation for publication). Research on the thesis “cAMP regulation by a PI3K $\gamma$  trojan peptide as a therapeutic strategy for obstructive airway diseases”.  
University of Torino, Molecular Biotechnology Center, Department of Molecular Biotechnology and Health Sciences, Torino, Italy.
- 2012 – 2015:  
Bachelor Degree in Biotechnology. Thesis “Mitochondrial Dynamism and Mitophagy in the Heart”.  
University of Torino, Molecular Biotechnology Center, Department of Molecular Biotechnology and Health Sciences, Torino, Italy.

### PERSONAL SKILLS AND COMPETENCES

Competences: Study of cell signaling and molecular pathways mainly involved in the control of respiratory physiopathology, both in vitro and in vivo experimental models.

Mother tongue: Italian

Other Languages: English (B2 Level)

Social skills and Competences: Strong verbal communication skills as demonstrated delivering presentations in several high-level international meetings.

Teaching Experiences: Biology and Genetic teacher assistant for the last 4 years for several classes at the University of Torino.

### TECHNICAL SKILLS

Protein analysis: Protein manipulation (extraction, SDS-Page electrophoresis, western-blotting), pulldown, biotinylation assay, histological, histochemical and immunohistochemical techniques and PDE assay.

Cell biology: Cell culture (immortalized and primary cultures of tracheal smooth muscle cells), cell transfection, proteins, DNA and RNA extraction, retrotranscription, Real Time PCR. Real time FRET-based analysis of cAMP in immortalized cell lines and primary cultures, cAMP quantification from cell cultures and mouse tissues.

Mice handling: Intra-tracheal, intra-muscular and intra-peritoneal injections. Microsurgery. Genomic DNA extraction from animal tissues, PCR.

Immunological techniques: ELISA immunoassay, immunoprecipitation and co-immunoprecipitation of proteins, immunofluorescence and fluorescence microscopy.

DNA cloning: Use of plasmid vectors, restriction and modification enzymes, bacteria. Genomic and plasmid DNA preparation.

### PUBLICATIONS

1. **Murabito, A.**, Bhatt, J., Ghigo, A. (2023) It Takes Two to Tango! Protein–Protein Interactions behind cAMP-Mediated CFTR Regulation. *Int. J. Mol. Sci* 24, 10538.

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2. **Murabito, A.**, Russo, M. & Ghigo, A. (2023) Mitochondrial intoxication by anthracyclines, Mitochondrial Intoxication, Academic Press. 14, Pages 299-321, ISBN 9780323884624, <https://doi.org/10.1016/B978-0-323-88462-4.00025-0>.
3. **Mergiotti, M.#, Murabito, A.#**, Prono, G., Ghigo, A. (2022). CFTR Modulator Therapy for Rare CFTR Mutants. *Journal of Respiration*.
4. **Ghigo, A.#, Murabito, A.#**, Sala, V., Pisano, A.R., Bertolini, S., Gianotti, A., Caci, E., Montresor, A., Premchandrar, A., Pirozzi, F., Ren, K., Della Sala, A., Mergiotti, M., Richter, W., de Poel, E., Matthey, M., Caldrea, S., Cardone, R.A., Civiletti, F., Costamagna, A., Quinney, N., Butnarusu, C., Visentin, S., Ruggiero, M.R., Baroni, S., Geninatti Crich, S., Ramel, D., Laffargue, M., Tocchetti, C.G., Levi, R., Conti, M., Lu, X., Melotti, P., Sorio, C., De Rose, V., Facchinetti, F., Fanelli, V., Wenzel, D., Fleischmann, B.K., Mall, M.A., Beekman, J., Laudanna, C., Gentzsch, M., Lukacs, G.L., Pedemonte, N., and Hirsch, E. A PI3K $\gamma$  mimetic peptide triggers CFTR gating, bronchodilation and reduced inflammation in obstructive airway diseases. *Science Translational Medicine*, 2022 Mar 30;14(638):eabl6328. doi: 10.1126/scitranslmed.abl6328.
5. Sala, V., Cnudde, S.J.#, **Murabito, A.#**, Massarotti, A., Hirsch, E., and Ghigo, A. (2021). Therapeutic peptides for the treatment of cystic fibrosis: Challenges and perspectives. *Eur J Med Chem* 213, 113191.
6. **Murabito, A.**, Hirsch, E., and Ghigo, A. (2020b). Mechanisms of Anthracycline-Induced Cardiotoxicity: Is Mitochondrial Dysfunction the Answer? *Front Cardiovasc Med* 7, 35.
7. **Murabito, A.#**, Cnudde, S.#, Hirsch, E., and Ghigo, A. (2020a). Potential therapeutic applications of AKAP disrupting peptides. *Clin Sci (Lond)* 134, 3259-3282.
8. **Sala, V.#, Murabito, A.#**, and Ghigo, A. (2019). Inhaled Biologicals for the Treatment of Cystic Fibrosis. *Recent Pat Inflamm Allergy Drug Discov* 13, 19-26.
9. Pirozzi, F., Ren, K., **Murabito, A.**, and Ghigo, A. (2019). PI3K Signaling in Chronic Obstructive Pulmonary Disease: Mechanisms, Targets, and Therapy. *Curr Med Chem* 26, 2791-2800.
10. Sala, V., Margaria, J.P., **Murabito, A.**, Morello, F., Ghigo, A., and Hirsch, E. (2017). Therapeutic Targeting of PDEs and PI3K in Heart Failure with Preserved Ejection Fraction (HFpEF). *Curr Heart Fail Rep* 14, 187-196.
11. **Li, M.#, Murabito, A.#**, Ghigo, A., and Hirsch, E. (2017). PI3Ks in Diabetic Cardiomyopathy. *J Cardiovasc Pharmacol* 70, 422-429.

#Equal Contribution

### PRIZES

- Best oral presentation price at the 16<sup>th</sup> European CF Young Investigators' meeting- Paris- France, 2023.
- Winner of the ECFS / CF Europe Post-Doctoral Research Fellowship supported by the European Cystic Fibrosis Society and Cystic Fibrosis Europe.
- Gerd Döring Award 2022 from the European Cystic Fibrosis Society.
- ECFS 2020 Young Investigator Award from the European Cystic Fibrosis Society.
- Best oral communication prize sponsored by Mironid from the Biochemical Society at the "Nanodomains in cyclic nucleotide signaling: from mechanisms to therapeutic approaches" conference- London- UK- September 16th- 18th 2019.

## Curriculum Vitae

### HONORS

- Reviewer for the International Journal of Molecular Sciences published by MDPI
- Member of the Public Engagement Committee at the Dept. of Molecular Biotechnology and Health Sciences at the University of Torino.
- Selected oral presentations at the Annual Conference of European Cystic Fibrosis Society (ECFS)- Rotterdam- The Netherlands- June 8<sup>th</sup>-11<sup>th</sup>, 2022.
- Invited speaker at the Spring School organized by the Cologne Cardiovascular Research Center- Cologne- Germany- May 2<sup>nd</sup>-3<sup>rd</sup>, 2022.
- Conference Chair at the 17<sup>th</sup> Conference of the Italian Society of Cystic Fibrosis (SIFC)- Naples- Italy- October 20<sup>th</sup>-23<sup>rd</sup>, 2021.
- Selected oral presentation at the Annual Conference of European Cystic Fibrosis Society (ECFS)- Online- 9<sup>th</sup>-12<sup>th</sup> June, 2021.
- Selected oral presentation at the North American Cystic Fibrosis Conference (NACFC)- Nashville- Tennessee- USA- October 31st- November 2nd, 2019.
- Selected oral presentation at the “Nanodomains in cyclic nucleotide signaling: from mechanisms to therapeutic approaches” conference- London- UK- September 16<sup>th</sup>- 18<sup>th</sup> 2019.
- Invited speaker at the “Giornata di Studio Guido Tarone 2019” meeting- Molecular Biotechnology Center. Turin-Italy- May 16th, 2019.
- Selected oral presentation at the North American Cystic Fibrosis Conference (NACFC)- Denver- Colorado- USA- October 18th- 20th, 2018.

### TRAVEL GRANTS

- Student Bursary from the Biochemical Society to participate at the “Nanodomains in cyclic nucleotide signaling: from mechanisms to therapeutic approaches” conference- London- UK- September, 2019.
- Travel grant from Italian Cystic Fibrosis Research Foundation for the 16th European Cystic Fibrosis Society Basic Science Conference, Dubrovnik, Croatia, 2019.
- Travel grant from Italian Cystic Fibrosis Research Foundation for the 15th European Cystic Fibrosis Society Basic Science Conference, Loutraki, Greece, 2018.