PERSONAL INFORMATION **Francesca Giordano**

Sex Female | Date of birth 09/07/1997 | Nationality Italian

WORK EXPERIENCE

05/2023-07/2023 **Internship at ITQB-NOVA, Universidade de Lisboa, Oeiras, Lisbon, Portugal**
Protein purification and functional characterization through biophysical techniques such as circular dichroism and spectrophotometrical assays.

01/11/2021- in progress: PhD course in Biochemistry at La Sapienza University of Rome
Department of Biochemical Sciences "A.Rossi Fanelli", Via Aldo Moro 5, 00185, Rome, Italy
Project: Biochemical characterization of hydrogen sulfide metabolism in Bacteria: the case of *Pseudomonas aeruginosa*
Expression, purification, and characterization of protein involved in Hydrogen Sulfide metabolism in *Pseudomonas aeruginosa.*

10/2020-10/2021 **Internship at La Sapienza University of Rome for Master's degree:**
Department of Biochemical Sciences "A.Rossi Fanelli", Via Aldo Moro 5, 00185, Rome, Italy
- Role of hydrogen sulfide in energetic metabolism and bacterial resistance to nitrosative stress: RNA extraction, RNA quantification, RT-qPCR, high-resolution respirometry, NO-amperometry, bacterial cell cultures, preparation and titration of gas solutions (nitric oxide and hydrogen sulfide).

Didattical works:
20/01/2023; 19/01/2024 **ATTIVITÀ DIDATTICHE ELETTIVE PROGRAMMATE (ADE):** course "Chimica e Propedeutica Biochimica" for Medicine and Surgery degree; assistant of Prof. Malatesta in "Resistenza osmotica del globulo rosso" laboratory lesson.

EDUCATION AND TRAINING

11/2021- in progress: **PhD course in Biochemistry** **7 EQF**
"La Sapienza" University of Rome
Department of Biochemical Sciences "A.Rossi Fanelli", Via Aldo Moro 5, 00185, Rome, Italy

Project: Biochemical characterization of hydrogen sulfide metabolism in Bacteria: the case of *Pseudomonas aeruginosa*
Aim of the project: investigate the role of hydrogen sulfide metabolic enzymes in the multidrug-resistant pathogen *Pseudomonas aeruginosa* to identify new possible targets against antibiotic resistance.
Protein expression and purification, protein characterization through size exclusion chromatography, western-blot, spectrophotometrical assays, high-resolution respirometry coupled with NO-amperometry and fluorescence (Next-gen all-in-one Oroboros Instrument), gasses preparation and titration (nitric oxide and hydrogen sulfide)

01/2020-10/2021 **Master's Degree in Genetics and Molecular Biology 110/110 cum laude 7 EQF**
"La Sapienza" University of Rome,,
- Role of hydrogen sulfide in energetic metabolism and bacterial resistance to nitrosative stress: bacterial cell cultures, RNA extraction and quantization, RTq-PCR, High-resolution respirometry experiments (Oroboros Instrument), NO-amperometry (ISO-NO electrode WPI), preparation and titration of gas solutions (nitric oxide and hydrogen sulfide).

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s)

	Listening	Reading	Spoken interaction	Spoken production
English	B1	B1	B1	B1	B1

Job-related skills

- Protein expression and purification (*E.coli*, IMAC)
- Protein quantification techniques (BCA, Bradford)
- Protein characterization by SDS-PAGE, WB, Size-exclusion chromatography, Circular dichroism
- Characterization techniques: spectrophotometric assay, high-resolution respirometry coupled with NO-amperometry and fluorescence.
- Gas solution preparation and titration (Nitric Oxide and Hydrogen Sulfide)
- RNA extraction and quantification, RT-qPCR

Digital skills

Microsoft programs /Pymol/ Good knowledge of software for graphical representation of data (PRISM GRAPHPAD), DatLab 8.0

Publications

- 11573/1707216 - 2024 - **Cyanide insensitive oxidase confers hydrogen sulfide and nitric oxide tolerance to *Pseudomonas aeruginosa* aerobic respiration**
  Nastasi, Martina R.; Caruso, Lorenzo; Giordano, Francesca; Mellini, Marta; Rampioni, Giordano; Giuffrè, Alessandro; Forte, Elena - 01a Articolo in rivista
  rivista: ANTIOXIDANTS (Basel: MDPI) pp. - - issn: 2076-3921 - wos: WOS:001191989500001 (0) - scopus: (0)

Abstracts

- Giordano, F.; Troilo, F.; Nastasi, M. R.; Giardina, G.; Travaglini Allocatelli, C.; Forte, E.; Vicente, J. B.; Di Matteo, A.; Giuffrè, A.; **Persulfide Dioxygenase from *Pseudomonas aeruginosa* unveils a novel crosstalk mechanism between the bioenergetically-relevant gaseous signaling molecules nitric oxide and hydrogen sulfide,** Biochimica et Biophysica Acta (BBA) - Bioenergetics,Volume 1865, Supplement, 2024, 149216,ISSN 0005-2728, https://doi.org/10.1016/j.bbabio.2024.149216.

- Forte, E.; Nastasi, M. R.; Caruso, L.; Giordano, F.; Mellini, M.; Rampioni, G.; Giuffrè A.; **Cyanide Insensitive Oxidase contributes to *Pseudomonas aeruginosa* tolerance to hydrogen sulfide and nitric oxide,** Biochimica et Biophysica Acta (BBA) - Bioenergetics, Volume 1865, Supplement, 2024, 149257, ISSN 0005-2728, https://doi.org/10.1016/j.bbabio.2024.149257.

- Barile, A.; Giordano, F.; Pistoia, G.; Di Matteo, A.; Giardina, G.; Vicente, J. B.; Forte, E.; Giuffrè A.; **Sulfide:quinone oxidoreductase from the multidrug resistant pathogen *Pseudomonas aeruginosa***, Biochimica et Biophysica Acta (BBA) - Bioenergetics, Volume 1865, Supplement, 2024,149287, ISSN 0005-2728, https://doi.org/10.1016/j.bbabio.2024.149287.

- Vicente, J. B.; Silva, D. H. P.; Giordano, F.; Fernandes, D. G. F.; Nunes, J.; Forte, E.; Antunes, A. M. M.; Giuffrè, A.; **Regulation of mitochondrial hydrogen sulfide metabolism by endogenous modulators of persulfide dioxygenase**, Biochimica et Biophysica Acta (BBA) - Bioenergetics, Volume 1865, Supplement, 2024, 149367, ISSN 0005-2728, https://doi.org/10.1016/j.bbabio.2024.149367.

Scientific participation in research projects

- Progetti per Avvio alla Ricerca - Tipo 1 AR1221816C4E6859: On the role of sulphide synthesizing enzymes CBS and CSE in amyotrophic lateral sclerosis models of Drosophila melanogaster
- Progetti di Ricerca (Piccoli, Medi) – Progetti Medi RM122181698FC992: Targeting hydrogen sulfide metabolism and tolerance as a promising antimicrobial strategy

Awards

- Progetti per Avvio alla Ricerca – Tipo 2 AR2241907895586C: The H2S-detoxifying Sulfide:Quinone Oxidoreductase from the multidrug resistant pathogen Pseudomonas aeruginosa: a new target against antibiotic resistance?

Courses

- "Bioinformatics: theory and applications from genome to drugs; 8° edition" 16-25/01/2023 at La Sapienza, University of Rome, Rome, (Italy)

Congress participation

- "25th European Nitrogen Cycle Meeting 2022" 28-30/09/2022 at La Sapienza University of Rome, Rome, Italy - **speaker**

- "3rd International Meeting of Italian Groups of Biomembranes and Bioenergetics (GIBB)" 08-11/06/2023 at Riva del Garda (TN), Italy - **speaker**

- "22nd European Bioenergetics Congress (EBEC)" 26-31/08/2024 at Innsbruck, Austria - **poster**

Driving licence B 2023-2033

Aggiornato: 21/10/2024