

GIOVANNI BULFARO

PERSONAL STATEMENT

My goal is to combine my knowledge in the field of cell biology with my knowledge in crystallography and Cryo-EM, always open to improving myself and acquiring new skills. During my studies I became passionate about and acquired experience on molecular biology, biochemistry and cellular biology. I would like to be part of an internationally competitive working group, participating to challenging projects.

WORK EXPERIENCE

05/2023-07/2023

Internship (Columbia University – New York, USA)

European Union's H2020-MSCA-RISE-2018 Research and Innovation program under the Marie Skłodowska-Curie (grant number GA.823780)

Cryo-EM training: samples vitrification using vitrobot (thermofisher scientific), clipping grids, quality evaluation of vitrified grids, Cryo-EM data analysis with CryoSPARC software

05/2021- 04/2024

PhD student (La Sapienza University-Takis S.r.l.)

Project: *BIOSTRUCT-FARM - Biologia Strutturale per lo sviluppo sinergistico di Farmaci innovativi*

- La Sapienza University: Structural characterization of antigen-antibody complexes via X-ray diffraction and Cryo-EM. This includes the full workflow: protein crystallization, grids preparation, autonomous data collection (ELETTRA and ESRF synchrotrons) and data analysis (CCP4 suite, CryoSPARC software).
- Taki S.r.l.: Expression and purification of proteins and monoclonal antibodies in eukaryotic and prokaryotic systems, affinity assays performed with Octet-BLI technology, advanced chromatographic methods for biophysical characterization and protein purification; protein stability evaluation by calorimetry assays (Nanotemper)

10/2018-01/2021

Internship (La Sapienza University) for Bachelor's and Master's degrees

- ***Phenotypic and functional characterization studies on NK cells:*** cytofluorimetry (FACS Canto BD), RTq-PCR, antibody-dependent stimulation in plate and through co-cultures, cytotoxicity assays, confocal microscopy.
- ***The role of mast cells in colorectal cancer:*** mice bones handling, differentiation of stem cells from the bone marrow into mast cells (for in vitro experiments), processing of the colon tissue of mice for tumor masses isolation.

EDUCATION AND TRAINING

05/2021- 04/2024

PhD course in Biochemistry

7 EQF

"La Sapienza" University – Takis S.r.l.

Department of biochemical Sciences "A.Rossi Fanelli", Via Aldo Moro 5

in collaboration with Takis S.r.l. – bando regione Lazio **POR Lazio FSE 2014/2020**

Project: BIOSTRUCT-FARM - Biologia Strutturale per lo sviluppo sinergistico di Farmaci innovativi

Aim of the project: investigate the structural interaction between monoclonal antibodies produced by Takis S.r.l. and the tumor marker ErbB3, in order to identify the structural determinants of the epitope recognition and the cellular effects relevant to cancer therapy.

DNA transfection (expifectamine), proteins production (HEK 293, CHO cell lines), protein purification and characterization (IMAC, Size-exclusion chromatography, SDS-PAGE, WB), cell cultures, ELISA assays, X-ray crystallography (hanging/sitting drop techniques, macro-/micro-seeding, Oryx4 robot for crystal screening), Cryo-EM.

11/2018-01/2021

Master's Degree in Medical Biotechnology (biomolecular curriculum) 110/110 cum laude

7 EQF

"La Sapienza" University

RNA extraction (Total RNA Mini Kit by Geneaid Biotech Ltd), RNA quantization (NanoDrop 2000c by Thermo Fisher Scientific), RTq-PCR, 7AAD probe cytotoxicity experiments, confocal microscopy experiments (fixation cells on slide and permeabilization for intracellular labeling using monoclonal antibodies), stimulation in antibody-dependent plates, use of software for statistical analysis (Prism-GraphPad).

10/2015-12/2018

Bachelor's degree in Biotechnology 110/110 cum laude

6 EQF

"La Sapienza" University

Extraction of white blood cells from peripheral blood (Ficoll), autonomous management of primary cell cultures and cell lines, direct and indirect labeling using monoclonal antibodies, use of the flow cytometer (FACS Canto by BD Biosciences) , use of software for the analysis of flow cytometric data (FlowJo).

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B1	B1	B1	B1	B1
Cambridge Assessment English Level B1					

Communication skills

- good communication skills gained through my experience working in a research group
- Good communication with supervisors

Organisational / managerial skills

- autonomous manager of my project

Job-related skills	I have possess the following scientific skills relevant for the tasks of the research project in question: <ol style="list-style-type: none"> 1- Protein expression and purification (HEK 293, CHO cell lines, IMAC) 2- Protein characterization by SDS-PAGE, WB, Size-exclusion chromatography, Nanotemper, BLI 3- Protein crystallization (crystal screening, hanging/sitting drop techniques, macro-/micro-seeding, Oryx4 robot for crystal screening, data analysis with CCP4 suite program) 4- Cryo-EM (samples vitrification using vitrobot, clipping grids, data analysis with CryoSPARC software)
Digital skills	CCP4Suite / CryoSPARC / Microsoft programs / Photo and video editing / Good knowledge of software for graphical representation of data (PRISM GRAPHPAD) / FlowJo (FACS data analysis)
Publications	<ul style="list-style-type: none"> - 11573/1665426 - 2023 - Effect of salts on the conformational dynamics of the Cytochrome P450 OleP DE SCISCIO, MARIA LAURA; NARDI, ALESSANDRO NICOLA; PARISI, GIACOMO; BULFARO, GIOVANNI; COSTANZO, ANTONELLA; GUGOLE, ELENA; FREDA, IDA; SAVINO, CARMELINDA; VALLONE, BEATRICE; MONTEMIGLIO, LINDA CELESTE; D'ABRAMO, MARCO - 01a Articolo in rivista rivista: MOLECULES (Basel: MDPI Berlin: Springer, 1996-) pp. - - issn: 1420-3049 - wos: WOS:000927697700001 (0) - scopus: 2-s2.0-85146781706 (0) - Submitted for publication to Structure: Binding of steroid substrates reveals the key to the productive transition of the cytochrome P450 OleP Antonella Costanzo; Francesca Fata; Ida Freda; Elena Gugole; Giovanni Bulfaro; Matteo Di Renzo; Luca Barbizzi; Cécile Exertier; Giacomo Parisi; Beatrice Vallone; Carmelinda Savino; Linda Celeste Montemiglio
Scientific participation in research project	<ul style="list-style-type: none"> - Progetti per Avvio alla Ricerca - Tipo 1 AR123188B0A0B47D: Redirecting P450 OleP regioselectivity toward C7 of testosterone by rational site-directed mutagenesis
Courses	<ul style="list-style-type: none"> - Introduction to Computational Antibody Engineering (allega certificato) - Vitrojet Workshop – Imaging center, EMBL, Heidelberg (Germany)-27-28 march 2023 (allega certificato) - LEGISLAZIONE NAZIONALE ED ETICA LIVELLO 1, MODULI 1 E 2, DM 5 AGOSTO 2021 7.5 Crediti formativi E.C.M. (allega certificato) - BIOLOGIA E GESTIONE DEGLI ANIMALI DA LABORATORIO, MODULI 3.1, 4, 5, 6.1, 7. DM 5 AGOSTO 2021 RODITORI E LAGOMORFI 19.5 Crediti formativi E.C.M. (allega certificato) - Modulo 3.2-6.2-8 corso di formazione e aggiornamento per la protezione degli animali da laboratorio nella ricerca scientifica: 23-27/10/2023; 26 Crediti formativi E.C.M. (allega certificato)
Congress participation	<ul style="list-style-type: none"> - 4th Joint AIC-SILS Conference Trieste, 12-15 September 2022 (participant) (allega certificate) - INTEGRATED STRUCTURAL BIOLOGY APPROACH FOR MEMBRANE PROTEIN RESEARCH 3-4 MARCH 2022 Sapienza University of Rome (European Union's H2020-MSCA-RISE-2018 Research and Innovation program under the Marie Skłodowska-Curie Grant Agreement No. 823780) (participant) (allega certificate) - PROMETEUS INTERNAL WORKSHOPS ON KNOWLEDGE ACQUIRED AND KNOWLEDGE RETURN PHASE 6 December 2023 Online workshop (European Union's H2020-MSCA-RISE-2018 Research and Innovation program under the Marie Skłodowska-Curie Grant Agreement No. 823780) (speaker) (allega certificate)
Driving licence	B 2015-2025

Sotto la mia personale responsabilità, dichiaro, ai sensi degli artt. 46 e 47 del D.P.R. 445/2000, in luogo delle relative certificazioni, che quanto dichiarato sopra corrisponde al vero. Il sottoscritto, inoltre, è consapevole che in caso di dichiarazione mendace sarà punito ai sensi del Codice Penale secondo quanto prescritto dall'art. 76 del D.P.R. 445/2000 e che, qualora dal controllo effettuato emerga la non veridicità del contenuto di taluna delle dichiarazioni rese, decadrà dai benefici conseguenti al provvedimento eventualmente emanato sulla base della dichiarazione non veritiera (art. 75 D.P.R. 445/2000). Autorizzo l'utilizzo dei miei dati in riferimento al trattamento dei dati personali, art. 13 Dgls 30/06/2003, n. 196.

DATA

22/04/2024