

PERSONAL INFORMATION

Mattia Laffranchi



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Sex: Male

Date of birth: 30/10/1990

Nationality: Italian

STUDIES APPLIED FOR

Molecular and Cellular biology studies

WORK EXPERIENCE

Postdoctoral fellowship

01/03/2021-  
ongoing

University of Roma "La Sapienza", Rome (Italy)

Research project titled "Role of CCRL2 polymorphisms in lung cancer immune surveillance" under the supervision of Prof. Silvano Sozzani, Department of Molecular Medicine. This fellowship is supported by an AIRC fellowship "Licia Venditti e Antonio D'Orazio" (grant number #25307).

Postdoctoral fellowship

01/03/2020-  
28/02/2021

University of Brescia, Brescia (Italy)

Research project titled "Novel molecular targets to control type I interferon production in psoriasis" under the supervision of Dott. Valentina Salvi, Department of Molecular and Translational Medicine.

Postdoctoral fellowship

01/01/2019-  
31/12/2019

University of Brescia, Brescia (Italy)

Research project titled "Evaluation of the structure of alpha-1-antitrypsin polymers derived from alpha-1-antitrypsin deficiency patients" under the supervision of Dr. Annamaria Fra, Department of Molecular and Translational Medicine.

International research experiences:

- University College London (UCL) (United Kingdom), Tutor Dr. James Irving, 18/03-15/09/2019.

PhD Student

01/11/2015-  
31/10/2018

University of Brescia, Brescia (Italy)

I entered in the PhD program of "Molecular Genetics Applied to Medical Sciences, XXXI cycle" under the supervision of Dr. Annamaria Fra, Department of Molecular and Translational Medicine. The research project aimed to study the genetic aspects and pathogenetic mechanisms underlying the alpha-1-antitrypsin deficiency (AATD) (MIM #613490).

External research experiences:

- National Research Centre (CNR) of Palermo (Italy), Tutor Dr. Mauro Manno, 20-26/09/2016.
- University College London (UCL) (United Kingdom), Tutor Dr. James Irving, 01/02-31/07/2018.

Research fellowship

01/04/2015-  
30/10/2015

University of Brescia, Brescia (Italy)

I worked in the laboratory coordinated by Dr. Annamaria Fra in the Department of Molecular and Translational Medicine. In this research project I contributed to the characterization of cellular models for compound heterozygosity in AATD.

## EDUCATION AND TRAINING

01/11/2015–  
12/02/2019

## PhD in Molecular Genetics Applied to Medical Sciences

University of Brescia, Brescia (Italy)

Thesis titled: "Towards a personalized medicine for alpha-1-antitrypsin deficiency: mechanistic insights into the heterozygous condition and identification of atypical rare alpha-1-antitrypsin variants". Score: Idoneo

01/10/2012–  
06/03/2015

## Master's Degree in Medical Biotechnologies

University of Brescia, Brescia (Italy)

Thesis titled: "Heteropolymerization of Alpha-1-Antitrypsin mutants in a cellular model of compound heterozygosity". Score: 109/110

01/10/2009–  
08/07/2012

## Bachelor's Degree in Biotechnologies

Thesis titled: "Methodologies for the study of the expression and the organization of the extracellular matrix in dermal fibroblast". Score: 103/110

## PERSONAL SKILLS

Mother tongue(s)

Italian

Foreign language(s)

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	C1	C1	C1	C1	C1

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user

Common European Framework of Reference for Languages

Driving licence

B

Job-related skills

*Cell Biology:*

Cell culture (immortalized or primary human cells); Whole blood and plasma samples; Transient/ Constitutive transfection; CRISPR-Cas9 gene editing and Cell sorting.

*Biotechnology:*

Antibody and recombinant protein production.

*Molecular Biology:*

DNA and RNA extraction, PCR and qPCR; Transcriptomic studies (RNAseq and scRNA); Design and build of expression vectors; Site-directed mutagenesis.

*Biochemistry:*

Protein extraction from cells or tissue; Protein purification via ion exchange or affinity chromatography and ultracentrifuges; SDS-PAGE, Native-PAGE and Immunoblot; Immunoprecipitation; Protein quantification; Enzymatic assays; Antigen- and Sandwich-ELISA; Surface Plasmonic Resonance (SPR); FRET.

*Microscopy:*

Fluorescent and confocal microscopy; Proximity Ligation Assay (PLA);

*Bioinformatics:*

Molecular structure visualization software (Pymol, VMD, Chimera); Sequence and protein alignment; Gene ontology applied to transcriptomic studies; Public databases knowledge; Predictors of tolerance or protein stability tools. RNA-seq and scRNA.

*Structural Biology:*

Principles of Negative-stain Electron Microscopy; 3D object reconstruction with Relion; Sitting/ Hanging drop protein crystallization; Molecular replacement with PHENIX and COOT.

*Digital skills:*

Languages: Basic knowledge in Python and Pearl; Good knowledge of the Adobe Package (Photoshop, Illustrator); Good knowledge of scientific software for densitometrical quantification (ImageStudio, ImageJ), for image processing (LSM Browser, Blobfinder and ImageJ) and statistical analysis (R, GraphPad Prism);

## SCIENTIFIC ACTIVITIES

Fundings

- AIRC fellowship "Licia Venditti e Antonio D'Orazio" (Grant number 25307, 90,000 €), duration 01/03/2021-28/02/2024.

Selected publications

- Salvi V, Nguyen O.H, Sozio F, Schioppa T, **Laffranchi M**, Scapini P, Passari M, Barbazza I, Tiberio L, Tamassia N, Garlanda C, Del Prete A, Cassatella M.A, Mantovani A, Sozzani S, Bosisio D. *SARS-CoV-2-associated ssRNAs*

## Curriculum vitae

*activate inflammation and immunity via TLR7/8.* preprint doi: <https://doi.org/10.1101/2021.04.15.439839>

- **Laffranchi M**, Elliston EL, Miranda E, Perez J, Ronzoni R, Jagger AM, Heyer-Chauhan N, Brantly ML, Fra A, Lomas DA, Irving JA. *Intrahepatic heteropolymerization of M and Z alpha-1-antitrypsin.* JCI Insight. 2020 Jul 23;5(14). doi: 10.1172/jci.insight.135459.
- Del Prete A, Sozio F, Barbazza I, Salvi V, Tiberio L, **Laffranchi M**, Gismondi A, Bosisio D, Schioppa T, Sozzani S. *Functional Role of Dendritic Cell Subsets in Cancer Progression and Clinical Implications.* Int J Mol Sci. 2020 May 30;21(11). doi: 10.3390/ijms21113930.
- 6I1O (2019-11-20, X-RAY DIFFRACTION 1.93 Å)
- 6I3Z (2019-11-20, X-RAY DIFFRACTION 3.1 Å)
- Junior member ABCD (Italian Association of Cell Biology and Differentiation) from 2017.
- Regular member SIICA (Società Italiana di Immunologia Immunologia Clinica e Allergologia) from 2021.

RCSC Protein Data  
Bank (PDB)  
deposited structures  
Memberships

I give permission to use my personal data, in compliance with D.L. n. 196/2003 (Data Protection Law).

Rome, 06/05/2021

Matia Laffranchi