

## PERSONAL INFORMATION

**Name** Margherita Festa

## EDUCATION

- 10/2006-06/2010 **Ph.D. in Biomolecular Science - University of Milano, Department of Bioscience** (former Faculty of Mathematical, Physical and Natural Sciences- Department of Biology)  
Thesis title: "Effect of a MAR element on the expression of a *Staphylococcus aureus* antigen for the production of an edible vaccine against dairy cow mastitis in *Nicotiana tabacum* L." - Project in collaboration between the University of Milano, (Department of Biology , Faculty of Sciences and Department of Animal Pathology, Hygiene and Veterinary Public Health, Faculty of Veterinary, A. Zecconi) and the University of Padova (Department of Histology, Microbiology and Medical Biotechnologies, I. Castagliuolo) - Supervisors: B. Basso, F. Sala (first and second year), C. Soave
- 11/2003-04/2006 **Master degree in Plant, Food and Environmental Biotechnology - University of Milan, Faculty of Agriculture**  
Thesis title: "Evaluation of edaphic fauna of different agroecosystems with classical and biomolecular techniques" - Supervisors: B. Manachini, P. Abbruscato (110/110 *cum laude*)

## SUMMER SCHOOLS AND VISITING STUDENTSHIPS

- 10-11/2016 Visiting Scientist at Curie Institute (Filippo Del Bene's lab), 26 Rue d'Ulm, 75005 Paris (France) working on the project : "Analysis of the functionality of Blink2 chimeric channel in zebrafish" Immunohistochemical analysis (IHC) on zebrafish embryos and *escape response* behavioral experiments.
- 11-17/05/2014 Biophysics of channels and transporters - FEBS/EMBO Lecture Course Ettore Majorana Foundation and Centre Erice (Sicily).
- 09/2012 Visiting student at Fudan University (Prof. Lu BaoRong )-Shanghai (China).
- 02-13/07/2012 Ion and water transport in plants - MISTRAL summer school (Montpellier International School on Ion and water TRANsport in pLants).

## WORK EXPERIENCE

- 07/2023- 01/2024 **PostDoc Collaborator at IBF (Institute of Biophysics-CNR- Genova )**
- 07/2022-06/2023 **PostDoc research fellowship at University of Padua – Dipartimento di**

**Biologia**

Project: Interactome of MitoK ATP channel -CARIPARO project to Dr. V. Checchetto.

- 05/2022-06/2022 PostDoc research scholarship at University of Padua – Dipartimento di Biologia**  
Project: Pharmacological treatment of mitochondrial ionic channels to induce the selective death of tumor cells: an in vivo study (Ildikò Szabo's Lab).
- 04/2020-04/2022 PostDoc research fellowship at University of Padua – Dipartimento di Biologia**  
PRIN project 2017 20174TB8KW: Leveraging basic knowledge of ion channel network in cancer for innovative therapeutic strategies-LIONESS. (Ildikò Szabo's Lab).
- 11/2017-03/2022 PostDoc research fellowship at University of Padua – Dipartimento di Biologia**  
Project: Characterization of Arabidopsis cMCU (Ildikò Szabo's Lab)  
And STARS project(Luca Carraretto) on TPK channels.
- 05/2016-06/2017 PostDoc research fellowship at University of Milan - Dipartimento di Bioscienze- Lab. Anna Moroni**  
Project: (ERC Advanced grant to A. Moroni) noMAGIC, noninvasive MANIPULATION OF GATING IN ION CHANNELS. Preparation of plasmids coding potassium channels in frame with magnetic field responsive proteins and their transfections in HEK cells. Electrophysiological analysis (patch-clamp) on transfected cells.
- 11/2013-03/2016 PostDoc research fellowship at IBF (Institute of Biophysics) - CNR (National Research Council (Genova)A. Carpaneto's lab**  
Project: Proteostasis and functional modulation of cation channels of the tonoplast and the lysosomal membrane. Performing plasmid construction with different animal lysosomal channels, protoplast transformation and plant vacuole patch-clamp.
- 10/2012-10/2013 PostDoc research fellowship at Alma Mater Studiorum- University of Bologna**  
Within P.Trost group I performed molecular cloning, *Arabidopsis thaliana* mutants (SALK, SAIL and GABIKAT) phenotype evaluation, DOMON motif containing protein cDNA cloning, evaluation of ROS presence with NBT staining and TBAR assay for lipid peroxidation.
- 01/2012-07/2012 Collaborator of IBF (Institute of Biophysics-CNR- Milano)**  
In A. Moroni's lab, I worked with Dr. A. Costa (Bioimaging) on the preparation of plasmid vector for protoplast transformation, protoplast transformation, visualization and analysis with both confocal and fluorescence microscopy. In July 2012 I visited Dr. A. Carpaneto (IBF-Genova) and spent one week performing protoplast transformation (with construct encoding TPC channels and Chloride transporter) and plant vacuole patch-clamp.
- 03/2011-12/2011 Post Doc collaborator at University of Milan**  
Evaluation and production of plasmid vector for plant stable transformation, tobacco transformation with lysosomal channel within the group of A.

Moroni.

**01/2007-12/2007 Collaborator of the Interuniversity National Consortium for Plant Molecular Biology**

Project: Production of plasmid vectors for poplar transformation to confer salt and stress resistance (using *O.sativa dreb* regulators) in the framework of a project involving Professor Lu Bao Rong (Fudan University- Shanghai, China).

**05/2006-09/2006 Collaborator of the Institute of Agricultural Entomology working for the Municipality of Milan (Section Environment and Energy)**

Project: "Technical and scientific assistance in the campaign for the control of mosquitoes (year 2006)"- Monitoring and collecting mosquitoes in rice fields and city streets, preparation, organization and divulgation of informative material (posters, brochures) for the citizens, working in a team of five people with different background. Project coordinator: L. Süss.

## TECHNICAL SKILLS

- Use of bioinformatics tools (BLAST, CLUSTAL suite, primer 3, WatCut, Chromas, Sequin, Seaview, Fiji and imaging software, patch-clamp software like pClamp Patch master etc.).
- Use of microbiological techniques on *E. coli*, *A. tumefaciens*, *S. cerevisiae*.
- DNA extraction from soil nematodes, from bacteria and plant tissues, PCR and hemi-nested PCR on DNA of nematodes, bacteria, plants, zebrafish, cells. Southern blot analysis.
- RNA extraction and cDNA preparation (retro-transcription) and quantitative PCR (RT-PCR).
- DGGE to evaluate polymorphisms on DNA from nematodes communities.
- Preparation of plasmid vectors for plant stable and transient transformation using genetic engineering techniques, cell transfection, CRISPR/CAS9 guides design, application of gene editing techniques on different cells (HEK, HeLa, PANC-1, MIAPACA2, COLO357, MDA MB231), single clones selection and evaluation.
- Preparation of Lentiviral plasmids, cells transduction.
- BirA construct preparation, biotinylation and preparation/purification of BirA tagged proteins (channels such as murine Kv1.3, and human VRAC).
- Protoplast transformation (*A. thaliana* and *O. sativa*) and whole plant *in vivo* imaging with fluorescence and confocal microscopy.
- Protein extraction and purification from plant tissues, *E. coli* and *S. cerevisiae*, Zebrafish, human and murine cells, SDS-PAGE, Western blot, ELISA, IHC on zebrafish embryos.
- Patch-clamp experience on HEK cells and Arabidopsis vacuoles.
- Lab Training of Biology and Biotechnology undergraduate and doctoral students during the PhD studentship and PostDoc positions.

## COMPUTER SKILLS

Great familiarity with bioinformatics software for data search in international databases, software for analysis and comparison of sequences, primers design, protein analysis, recording software and electrophysiological analysis (Clampex, Patchmaster), visualization and analysis of confocal/fluorescence microscopy images (Software Leica, Zeiss ZEN, Nikon and ImageJ / Fiji).

Sound knowledge of MS Excel, Word, PowerPoint.

## LINGUISTIC SKILLS

Common European Framework of Reference for Languages (CEFR) proficiency levels

|         | Writing | Speaking | Understanding |
|---------|---------|----------|---------------|
| English | C1      | C1       | C1            |