DAVIDE BOSI

DEVELOPMENTAL BIOLOGIST

CONTACT ME AT

davide.bosi@usys.ethz.ch

live:dadebosi

@davidebosi

0000-0003-1822-8874

PERSONAL PROFILE

Molecular Biologist with three years of experience in Developmental biology Biology. I am currently enrolled as a PhD student at ETH Zurich, focusing my studies on pig embryos development, cryopreservation and on-farm embryo transfer.

RESEARCH INTERESTS

Oocytes, Meiosis, Fertilization, Embryology, Cryopreservation, Preimplantation Development, Extracellular Vesicles, miRNAs, Chromatography

OTHER INTERESTS

In the last 2 years, I developed a great interest in scientific communication and presentation. This passion encuraged me to delve in the word of typography, palettes and graphic design. I am a proud plant lover. I love to hike in the mountains and skiing. I like travel adventures and learning about culture and history of places I visit. Museums, churches and historic buildings are 'must' of my trips.

WORK & TRAINING EXPERIENCE

PhD Candidate

Ulbrich Lab, D-USYS, ETH Zurich (CH) | June 2023 - Present

ETonFARM - Non-surgical porcine embryo transfer

Assisted reproductive technologies usage in pigs is still underdeveloped due to the challenging female anatomy of the reproductive tract and compromised embryo survival rates. The current practices are lacking practical and non-laborious methods for producing piglets using ART. This project aims to develop a feasible embryo production (EP) scheme in pigs that allow the use of sows of high genetic merit.

Lab Assistant

Brayboy Lab, Klinik für Pädiatrie mit Schwerpunkt Neurologie, Charité Universitätsmedizin Berlin | Nov 2021 - May 2023

Study on the effects of MDR-1 dysfunction on mouse oocytes

MDR1 is an ATP-dependent transmembrane effluxer that localizes on cellular and mitochondrial membranes. I am studying the consequences of MDR-1 dysfunction on mouse oocyte quality, meiosis progression and calcium homeostasis.

Applied techniques: Handling of Mice, Oocyte Isolation, Western Blot, IVM, PCR, qPCR, Chromosome Spread, Histochemistry, Immunofluorescence, Co-immunoprecipitation, Whole Genome Amplification, Ovary Cryosectioning, Time-Lapse Imaging, Fluorescence and Confocal Microscopy.

Lab Technician

Cerba Heath Care Italia | Nov 2020 - Sep 2021

Analysis of SARS-CoV-2 nasopharyngeal swabs by RT-qPCR

During this experience, I was responsible for the entire analysis of nasopharyngeal swabs during the evening shifts. Specifically, my work consisted in neutralising samples, extracting the RNA, performing RT-qPCR, and insert results in the system

Internship & Experimental Thesis

Developmental Biology & Stem Cells Lab

University of Pavia (Italy) | Dec 2018 - Jul 2020

Study on the effects of BPA on mouse oocytes (~7 months)

Applied techniques: GC-MS, IVM, IVF, RT-PCR, RT-qPCR.

Thesis Project (En): Cumulus cells contribution to the acquisition of mouse oocyte developmental competence

CCs from SN and NSN oocytes release in the culture medium extracellular vesicles with different miRNA content. These vesicles are able to cross ZP and directly influence oocyte quality.

Applied techniques: Cell Culture/Co-culture, IVM, IVF, Optical & Fluprescence Microscopy, Nanoparticle Tracking Analysis, Fluorometric analysis.

LANGUAGE SKILLS

- Italian (Native)
- French
- English (IELTS test, 7.0 = C1):

L.	R.	W.	S.
8	7	6	7.5

IT SKILLS

- Basic Knowledge of C and C++
- Basic knowledge of R
- MS Office
- Inkscape/Illustrator/Canva
- Fiji ImageJ
- GraphPad Prism

CERTIFICATIONS

- FELASA B certificate
- LTK M1 and M20

Erasmus+ Studio & Internship

Marine Biotech. & Aquaculture group
University of Aveiro (Portugal) | Feb 2018 - Jul 2018

Thesis Project (En): Lipidomic characterization of the photosynthetic sea slug E. viridis, its macroalgal food C. tomentosum and the plastids isolated from both organisms

Feeding on C. tomentosum, E. viridis is able to retain and use chloroplasts (kleptoplasts) as an alternative energy source. I analyzed FA and PL content in both chloroplasts and kleptoplasts and in fed vs 1 week starved sea slugs.
Applied techniques: GC-MS, TLC, HPLC, ESI-MS, ESI-MS/MS

EDUCATION

Molecular Biology and Genetics

Master degree | University of Pavia (It) | Oct 2018 - Jul 2020

Program entirely taught in English with lectures and exams focused on genetics, molecular biology, developmental biology, biochemistry and microbiology | 110/110 Cum Laude

Biotechnology - Biomolecular option

Bachelor degree | University of Pavia (It) | Oct 2015 - Oct 2018

Program with a practical-methodological emphasis. Exams and labs focused on genetics, molecular biology, chemistry and biochemistry | 108/110

Scientific High School Diploma

IIS A. Maserati, Voghera (It) | Sept 2010 - Jul 2015

"Applied Sciences" option: It includes a series of laboratories and lectures to prepare students for STEM careers

PUBLICTIONS & CONFERENCES

Nabi et al. 2022 - **Multidrug resistance transporter-1 dysfunction perturbs meiosis and Ca2+ homeostasis in oocytes** - Reproduction | PMID: 36215093

We demonstrated that young *Mdr1a* mutant mice produce oocytes characterized by lower quality, with a significant delay in the GV to GVBD transition, an increased percentage of symmetric divisions, chromosome mis-alignments and a severely altered meiotic spindle shape compared to the wild types. In addition, MDR-1 mutant oocytes are inable to manage Ca2+ storage content and oscillations. Finally, we observed that 1-year-old mutant ovaries express a lower amount of Sirt1, Sirt3, Sirt5, Sirt6 and Sirt7 compared to wild type levels. Our work emphasize the importance of MDR-1 in mitochondrial physiology and highlight the influence of MDR-1 on oocyte quality and ovarian aging.

Bosi D., NAbi D., Brayboy L.M. - **Mutated MDR-1 impairs chromosome alignment and reduces oocyte quality** - Abstract & Poster presentation - ESHRE 38th Annual Meeting. https://doi.org/10.1093/humrep/deac107.638