

Internship in Microbiology

Applied Microbiology Research group, Institute of Medical Microbiology, UZH

08.07.2024

Our research group [Applied Microbiology Research](#) at the **Institute of Medical Microbiology at the University of Zurich** is searching for a motivated biology student as an **Research Intern (100%, as soon as possible for 8 weeks)**.

The project

The research project is investigating the evolution of antimicrobial resistance (AMR). How, why and how quickly do bacteria turn resistant? Are there patterns or mechanisms detectable in their pheno- or genotype? Specifically, we study the evolution of *Escherichia coli* bacteria in the gut microbiome of patients receiving human stem cell transplantation (i.e. mostly leukaemia patients). These patients receive a lot of antibiotics, as they are highly immunocompromised, especially before their new immune system starts to work at full steam. These antibiotics influence their gut microbiome and very likely lead to AMR. In a unique and large-scale study, we have a cohort of 100 patients donating stool samples (which gives us access to their gut microbiome) every week for half a year, from before, during and after the transplantation. We plan to isolate 15 bacterial colonies from these stool samples for every patient (n = 100) and every time point (n = 28) on selective agar media, extract their DNA, assess the species by MALDI-TOF, and biobank everything.

Your tasks

- Helping with the isolation, especially troubleshooting, refining and executing this protocol
- Diving into culturomics; handling different agar types and getting to know their characteristics. Isolation of pathogens by selective agar plates
- Learning how to determine species of clinical isolates by MALDI-TOF, a method which is widely used in diagnostics
- Extracting bacterial DNA of clinical samples with our robots (Maxwell and/or Qiagen)
- Helping with the reception of clinical samples, storage and biobanking
- Participating in lab meetings and getting to know an applied microbial research lab at the interface of research and diagnostics. Our team has a wide range of backgrounds ((micro)biology, bioinformatics, pharmacy, AI and machine learning etc.) and positions (PhDs, lab techs, research assistants, Postdocs, BSc/MSc students etc.), so lots of interesting people to exchange with!

Your profile

We are searching for a motivated student in the field of biology, microbiology, biomedicine, health sciences, or a related field. Preferably, you already have some wet lab experience and are in your Masters. However, engaged bachelor students are also welcome to apply. Your personal skills should include excellent organisational skills, ability to work independently and in a team with a high level of self-motivation and interest in medical microbiology and applied research questions.

Are you interested?

To apply, please send us your updated CV and a motivation letter to Prof. Adrian Egli (principal investigator, aegli@imm.uzh.ch) and Elisa Sosa (direct supervisor, elisa.sosa@uzh.ch).

Quickfacts

Position: Research Intern (unpaid)

Qualifications: Master or motivated Bachelor student in Biology related field.

Duration: 8 weeks

Start date: as soon as possible

Supervisor: Elisa Sosa, PhD student