Research Projects in Olomouc, Czech Republic for Students Applying for Erasmus/Erasmus+ Scholarships (Academic Year 2023/2024)

Our group offers projects for 3-6 month visits within the framework of the Erasmus/Erasmus+ programs during the academic year 2023/2024. Individual projects within our research programs listed below will be designed collaboratively with the student, based on their interests and experience. Longer visits are preferred, as they allow for more complex and independent projects. If you are interested, do not hesitate to contact us.

Research Areas

1. Biology of Tardigrades

We are utilizing tardigrades (water bears) cultures for radioresistance studies and are also working to establish breeding populations from environmental species found in moss, soil and water. You would be involved in the isolation of new specimens, their initial characterization (microscopy, DNA barcoding), identifying suitable culture conditions, and conducting pilot stress studies.

2. Studies of Cytoprotective Compounds

We are developing compounds that protect cells from radiation, environmental toxins, and other forms of stress. These have potential applications in cosmetics, dermatology, and neurology. Depending on your previous experience with cell-based assays, you could be involved in assay development, screening, hit validation, and studies of the mechanisms of action. Candidates should have experience with tissue cultures.

3. Drug Screening on Nematodes

We use the free-living model nematode *Caenorhabditis elegans* to identify cytoprotective and anti-aging compounds. This nematode also serves as a model for parasites. You would be involved in all phases of drug screening, which includes the preparation of bacteria and worm cultures and evaluating worm fecundity, motility, and viability using tools such as wMicrotracker and automated microscopy coupled with image analysis. Candidates should have experience working under sterile conditions.

Contact

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