

Max Planck Institute of Colloids and Interfaces - Department of Biomaterials



The Department of Biomaterials focuses on interdisciplinary research in the field of biological and biomimetic materials. The emphasis is on understanding how the mechanical or other physical properties are governed by structure and composition and how they adapt to environmental conditions.

MSc thesis: Chorioallantoic membrane (CAM) assay for the study of multiple myeloma

Development of an alternative, less sentient in vivo model (CAM assay) to study the effect of multiple myeloma cancer cells in the bone matrix microenvironment.

City: Potsdam; Starting Date: 02/03/20; Duration: 6-9 months; Remuneration: To be discussed

Task

Background: Biology, Biomedicine, Biotechnology or Biomedical Engineering

Qualifications

You should have a background in biology, biomedicine, biomedical engineering, biotechnology or similar, and strong interest in cancer biology. Previous experience with cell culture will be highly valuable, but not essential. The project will be carried out at the Max Planck Institute of Colloids and Interfaces in the group of Dr Amaia Cipitria together with Dr Inés Moreno.

What We Offer

Multiple myeloma (MM) is a type of blood cancer in which plasma cells grow aberrantly and produce abnormal antibodies. In the clinic, MM patients show lesions in the skeleton which do not heal, even when the patient is in complete remission. MM cells mainly reside in the bone marrow and alter bone homeostasis by activating bone resorption and inhibiting bone formation. We are interested in understanding how these cancer cells alter the biophysical properties of the bone extracellular matrix. The project will involve cell culture of human MM cell lines to study their interaction and effects with the extracellular matrix of embryonic chick femurs. In the first part of the project you will culture femurs from chick embryos in vitro (organotypically) together with MM cells. In a second part of the project you will use the chorioallantoic membrane (CAM) assay as a less sentient, refinement model (3Rs) to examine the interaction of cancer cells with the bone tissue in vivo. Exploratory analysis will involve histology to localize cancer cells in the tissue and micro computed tomography to evaluate 3D changes in the bone structure.

Application

Please send your application including a motivation letter, your CV and a transcript of your university record to these two email addresses: **ines.moreno@mpikg.mpg.de** and **amaia.cipitria@mpikg.mpg.de** Please indicate "Master thesis –CAM assay and multiple myeloma" in the subject line. The project can start at the beginning of March 2020. The working language is English.

Dr Amaia Cipitria (Emmy Noether Group Leader) and Dr Inés Moreno (Humboldt Postdoctoral researcher), Dept. of Biomaterials, Max Planck Institute of Colloids and Interfaces, Golm, Potsdam.

More information at <https://stellenticket.de/75614/FUB/>
Offer visible until 13/02/20

