Master's Thesis Project in Experimental Translational Oncology

Are you interested in **cancer research**, **translational oncology**, and **hands-on laboratory work**? We offer an exciting **Master's thesis project** for motivated students who want to work at the interface of **basic research and clinical oncology** at the **Experimental Translational Oncology Group**, Research Unit *Translational Metabolic Oncology (TMO)*, Institute for Diabetes and Cancer, **Helmholtz Munich** (link).

Why this project?

Head and neck squamous cell carcinoma (HNSCC) **belongs to the top 10 most common cancers worldwide**, with about two-thirds of patients diagnosed at an advanced stage and a high risk of recurrence despite **aggressive multimodal treatment**, including radiotherapy. **Non-HPV-associated HNSCC** in particular remains a major clinical challenge. Current research is limited by preclinical models that fail to capture early radiotherapy effects and the complex 3D structure of human tumours. **Tissue slice cultures** preserve the native tumour architecture and microenvironment, offering a **highly translational and clinically relevant model**.

What will you do?

In this Master's thesis project, you will work with **fresh human tumour material** to establish and optimize **ex vivo tissue slice cultures** from HNSCC patients. You will perform **controlled ex vivo irradiation** of these cultures and assess tissue viability and structural integrity using techniques such as **immunofluorescence staining**, thereby generating high-quality samples suitable for advanced downstream analyses, including **spatial transcriptomics**. The project is carried out in close collaboration with the **ENT Department at LMU University Hospital**.

Who should apply?

We are looking for **Master's students** in life sciences, biomedical sciences, molecular biology, can cer biology, or related fields who are highly motivated, curious, and eager to gain hands-on experience with **patient-derived tumour models** in a translational research setting.

What we offer

- A **hands-on, clinically relevant Master's thesis project**
- Training in cutting-edge ex vivo tumour models
- Close supervision in a supportive, interdisciplinary research environment
- Collaboration with clinicians and pathologists
- Access to state-of-the-art research infrastructure
- Insight into translational oncology and **multimodal cancer treatment research**

Start

As soon as possible, summer semester **2026**

How to apply

Please send your **application** including a **motivation letter, CV, and transcript of records** as a **single PDF** by email to PD Dr. rer. nat. Julia Hess, julia.hess@helmholtz-munich.de.