

Equipped with
5 different
qPCR cyclers,
robotics and
high throughput
qPCR

PhD position available

Our laboratory appoints students with high ambitions to join ongoing **project focused on cancer research**. The project is held in the cooperation with clinical sites **Third Medical Faculty of Charles University and General Faculty Hospital in Prague.**

Student is expected to have background in molecular biology, genetics of cancer diseases or medicine or related field. He/she will be expected to work independently, in a highly stimulating working atmosphere.

Project description

Gene expression profiling in circulating tumor cells (CTCs) in breast cancer patients - a tool for early metastasis detection and therapy individualization (IGA 2008 - 2010, IGA 2010-2013)

Despite recent advances in the diagnostics and therapy of breast cancer many patients with primary breast cancer, even when diagnosed at early stage, eventually suffer a relapse of the disease and ultimately die. A systemic relapse of breast cancer occurs after curative operation in 20-40% of the patients, even for those with a tumor size less than 2 cm in diameter independently of nodal status. It is clear that the hematogenous route is a significant route for tumor dissemination.

The presence of circulating tumor cells (CTCs) in the blood indicates disease progression. Their abundance reflects a relapse or metastating process, since CTCs survive only some 24 hours in the circulation. The main goal of the project is to monitor disease progress in breast cancer patient by measuring the gene expression of disease marker (MUC-1, EpCAM, HER2/neu and other potential oncomarkers) in CTCs.

Based on the number of CTCs in blood circulation and the level of biomarker gene expression we monitor the dynamics of the disease and the effect of the chemotherapy the patient is given, which allow us to optimize the treatment for every individual. This is expected to be one of the most important progresses in the therapy of cancer – the personalized therapy.

Application Procedure:

send application (incl. CV, short summary of your masters thesis, motivation letter) to:

veronika.kasparova@img.cas.cz

For information about visit www.img.cas.cz/ge/

People involved in project:

Prof. Mikael Kubista, PhD

Professor, specialist on gene expression profiling
affiliation: Laboratory of gene expression, Institute of Biotechnology, AS CR/TATAA Biocenter, Gothenburg, Sweden-cofounder

MSc. Marianna Romzova, PhD

Postdoctoral researcher, molecular geneticist, high-throughput expression profiling on single cell level
affiliation: Laboratory of gene expression, Institute of Biotechnology, AS CR

MSc. Katarina Kolostova, PhD

Postdoctoral researcher, tumor biologist, specialist on circulating tumor cell detection and sample preparation
affiliation: Laboratory of tumor biology, 3rd Medical Faculty, Faculty Hospital Kralovske Vinohrady, Prague, Czech Republic/Laboratory of gene expression, Institute of Biotechnology, AS CR

Zuzana Usiakova, MD

PhD student, molecular oncologist
affiliation: Laboratory of gene expression, Institute of Biotechnology, AS CR/ General Faculty Hospital in Prague and 1st Medical Faculty of Charles University

MSc. Veronika Mikulova

PhD student, molecular biologist
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