

## Kratek opis usposabljanja mladega raziskovalca (*Short description of the Young Researcher's training*)

1. Raziskovalna organizacija (*Research organisation*):

Univerza v Ljubljani, Medicinska fakulteta

2. Ime, priimek in elektronski naslov mentorja (*Mentor's name, surname and email*):

doc. dr. Tadeja Režen, tadeja.rezen@mf.uni-lj.si

3. Šifra in naziv raziskovalnega področja (*Research field*):

1.05 Biokemija in molekularna biologija/ 3.00 Medicinske vede

4. Kratek opis usposabljanja mladega raziskovalca (*Short description of the Young Researcher's training*):

Navedite tudi morebitne druge zahteve, vezane na usposabljanje mladega raziskovalca (npr. znanje tujih jezikov, izkušnje z laboratorijskim delom, potrebne licence za usposabljanje...).

Rak jeter ima visoko smrtnost zaradi omejenih terapevtskih pristopov in pozne diagnoze. Njegova incidenca se povečuje zaradi staranja prebivalstva in tudi zaradi naraščanja etiologije povezane z metabolično zamaščenostjo jeter. Bolezni jeter so kompleksne večfaktorske bolezni, ki zahtevajo interdisciplinaren pristop k preučevanju in razumevanju molekularnih mehanizmov patologije razvoja in progresije bolezni.

Mladi raziskovalec/mlada raziskovalka bo z različnimi omskimi pristopi analiziral/a vzorce bolnikov in s pristopi sistemske medicine določil/a nove terapevtske tarče in molekularne označevalce bolezni. Molekularno funkcijo in potencial najboljših kandidatov bo potrjeval/a na celičnih modelih s klasičnimi molekularnimi in biokemijskimi metodami. Usposabljanje bo obsegalo sodelovanje pri klinični študiji in delo z vzorci bolnikov, različne pristope k transkriptomskim analizam, učenje izbranih statističnih in matematičnih orodij sistemske medicine in funkcijske genomike, delo s celičnimi linijami in razvoj celičnih modelov raka jeter ter številne različne molekularne in biokemijske metode. Usposabljanje bo potekalo na Centru za funkcijsko genomiko in bio-čipe, ki je del Inštituta za biokemijo in molekularno genetiko, na Medicinski fakulteti UL, del usposabljanja pa bo potencialno opravljal/a v tujini.

Iščemo visoko motiviranega kandidata/kandidatko, ki si želi usposabljati tako v laboratoriju kot tudi v analizah podatkov. Od kandidata/kandidatke pričakujemo željo po raziskovanju nepoznanega, ustvarjalnost, samoiniciativnost in sposobnost timskega dela v interdisciplinarni in mednarodni skupini.

Liver cancer has a high mortality rate due to limited therapeutic approaches and late diagnosis. Its incidence is increasing due to the ageing of the population and also due to the increasing aetiology associated with metabolic fatty liver disease. Liver diseases are complex multifactorial diseases that require an interdisciplinary approach to the study and understanding of the molecular mechanisms of the pathology of disease development and progression.

The young researcher will analyse the patient samples using various omics approaches and determine new therapeutic targets and molecular biomarkers using systems medicine approaches. The molecular function and potential of the best candidates will be confirmed on

cellular models by classical molecular and biochemical methods. The training will include participation in a clinical study, working with patient samples, different approaches to transcriptome analyses, learning selected statistical and mathematical tools of systemic medicine and functional genomics, working with cell lines and developing cell models of liver cancer, and several different molecular and biochemical methods. The training will take place at the Centre for Functional Genomics and Bio-chips, which is part of the Institute of Biochemistry and Molecular Genetics at the Faculty of Medicine UL and part of the training will potentially take place abroad.

We are looking for a highly motivated candidate who wants to train both in the laboratory and in data analysis. From the candidate, we expect a desire to explore the unknown, creativity, self-initiative and the ability to teamwork in an interdisciplinary and international group.