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

1. Raziskovalna organizacija (*Research organisation)*:

Univerza v Ljubljani, Fakulteta za farmacijo (University of Ljubljana, Faculty of Pharmacy)

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

Barbara Ostanek (barbara.ostanek@ffa.uni-lj.si)

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

3.07 Metabolne in hormonske motnje

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 angleškega jezika, izkušnje z laboratorijskim delom, potrebne licence za usposabljanje…).

slo: Zaradi staranja svetovne populacije postajajo s staranjem povezane bolezni vedno večji zdravstveni in socialno-ekonomski problem. Mednje uvrščamo tudi osteoporozo, ki predstavlja najpogostejšo presnovno bolezen kosti. Nastane zaradi neravnovesja med kostno razgradnjo in izgradnjo kar vodi v povečano tveganje za zlome. Sedanji pristopi k diagnostiki in zdravljenju niso optimalni. Mladi raziskovalec bo del raziskovalne skupine, ki se na Fakulteti za farmacijo, Katedri za klinično biokemijo že več kot 20 let ukvarja s proučevanjem mišično skeletnih bolezni. V skupini smo prispevali k pomembnim odkritjem nekaterih genetskih dejavnikov pri osteoporozi, v zadnjem času pa raziskave razširili tudi na druge mehanizme uravnavanja kostne presnove, kot so mikroRNA (miRNA). Pri tem sodelujemo tudi z uglednimi mednarodnimi inštitucijami. Mladi raziskovalec se bo vključil v to delo in njegov cilj bo identifikacija in ovrednotenje novih genomskih in epigenomskih označevalcev za personalizirano diagnostiko in zdravljenje osteoporoze. Delo bo vključevalo analizo vzorcev DNA, merjenje izražanja mRNA in miRNA kot tudi *in vitro* vrednotenje funkcije potencialnih označevalcev na celičnih modelih. Za mladega raziskovalca je zaželjeno, da že ima izkušnje z delom v molekularno genetskem in celičnem laboratoriju ter obvlada angleški jezik.

eng: Due to the aging of the global population, aging-related diseases are becoming an increasing health and socio-economic problem. One of them is osteoporosis, which represents the most common metabolic bone disease. It is caused by an imbalance between bone resorption and formation leading to an increased risk of fracture. Current approaches to diagnosis and treatment are not optimal. A young researcher will be a part of a research group that has been involved in the study of musculoskeletal disorders for more than 20 years at the Faculty of Pharmacy, the Department of Clinical Biochemistry. Our group contributed to important discoveries of some genetic factors in osteoporosis, and recently, research has been extended to other mechanisms of bone metabolic control, such as microRNA (miRNA). We also have collaboration with reputable international institutions. A young researcher will be involved in this work and his goal will be to identify and evaluate new genomic and epigenomic markers for personalized diagnosis and treatment of osteoporosis. The work will include analysis of DNA

samples, measurement of mRNA and miRNA expression as well as *in vitro* evaluation of the function of potential markers on cellular models.
For a young researcher it is desirable to already have the experience of working in a molecular genetic and cell laboratory and good knowledge of English language.