Postdoctoral position in Biochemistry/Molecular Biology

" Transcriptional regulation of microbial ribonucleotide reductases by NrdR"

at **Department of Biochemistry and Biophysics, Stockholm University**

Organisms store their genetic information in DNA and the enzyme ribonucleotide reductase (RNR) catalyses the reaction that provides new DNA building blocks and is essential in all free-living organisms. RNRs are therefore important targets in anti-microbial and anti-cancer therapeutic research. NrdR is a global repressor of RNRs and is the only transcription factor that regulates all classes of RNRs in prokaryotes, affecting bacterial fitness, viability, infectivity and biomass formation. From a medical standpoint, NrdR is of interest because of its absence in eukaryotes, which makes it a good target in development of antimicrobial agents. NrdR is a small protein comprised of a zinc-ribbon and an ATP-cone. Its oligomeric nature and complex allosteric regulation makes the research exciting and challenging at the same time. Despite the fact that NrdR is present in the majority of bacteria and is a central regulator in the process of DNA synthesis, very few studies addressed its mechanism of action. In our group we employ state-of-the-art technologies to address three key issues: i) what are the molecular mechanisms by which NrdR controls the transcription of RNR genes ii) how does the NrdR mode of action vary among different bacteria and iii) can NrdR be targeted *invivo* to impair bacterial growth and survival.

The postdoctoral project includes expression and purification of NrdR from different bacteria, biophysical and biochemical characterization of the oligomeric protein, its ligand binding properties and DNA-interaction studies, as well as structure determination (collaboration).

We employ biochemical and biophysical methods as well as bioinformatics. We collaborate with research groups in Sweden and abroad and complement the biochemistry with structural studies, mainly Cryo-EM and X-ray crystallography. The collaborative project therefore will offer an excellent opportunity for training in a wide-range of advanced methods and technologies. You will work together with and under the supervision of Dr Inna Rozman Grinberg, researcher involved in the initial discovery of NrdR, in close collaboration with prof. Britt-Marie Sjöberg, a leading scientist in the field of RNR research.

Stockholm University, situated in the beautiful capital of Sweden, is one of the 200 highest-ranked universities in the world according to several well-established university ranking tables. Department of Biochemistry and Biophysics (DBB) is the largest biochemistry department in Sweden and embraces the Science for Life Laboratory - a national resource of unique cutting-edge technologies and expertise, e.g. the Cryo-EM national facility.

Qualifications

The candidate shall have a PhD or about to be awarded a PhD in Biochemistry, Molecular Biology or related sciences, preferentially with focus on transcription factors and/or oligomeric proteins. We seek highly motivated candidates with knowledge in protein chemistry, experience with bacterial expression systems, protein purification and biochemical characterization. Our key methods include microscale thermophoresis (MST), ITC, analytical SEC and more. Familiarity with structural biology is an advantage. Candidates should be proficient in spoken and written English and documented capability of good teamwork. The candidate must be able to drive the research: ability to plan, perform and analyse the experiments, as well as come up with new ideas and novel research directions is of a great advantage. Personal qualities will also be taken into account.

Time span
The postdoctoral position initially is a one-year full-time position financed via a tax-free scholarship of 25000 SEK/month from Carl Trygger's Foundation, with a possibility to be prolonged for one more year. Starting date is open for discussions, though ideally the successful candidate should start as soon as possible.

Additional information
Dr Inna Rozman Grinberg
Personal webpage can be found at https://www.su.se/english/profiles/rinna-1.257422#
Email: inna.rozman@dbb.su.se

Application
Applications should include all of the following items in one merged pdf file:

i) a cover letter of 1 page stating your motives for applying
ii) curriculum vitae
iii) full publication list
iv) contact information to two or three references (your PhD or post-doc supervisors)
v) a copy of the PhD certificate and/or other relevant degree certificates

Applications should be sent via email to: inna.rozman@dbb.su.se

We are looking forward to receiving your application!