

JOB OFFER

Position in the project:	PhD Student / Assistant
Scientific discipline:	Biochemistry, Molecular biology, RNA biology
Job type (employment contract/stipend):	Stipend
Number of job offers:	1
Remuneration/stipend amount/month (*X0 000 PLN of full remuneration cost, i.e. expected net salary at X 000 PLN*):	4500 PLN
Position starts on:	01.10.2021
Maximum period of contract/stipend agreement:	6 months
Institution:	Institute of Biochemistry and Biophysics, Polish Academy of Sciences Pawinskiego 5a, 2-106 Warszawa, Poland
Project leader:	Dr. Agata L Starosta
Project title:	Translation regulation in spore-forming bacterium – Specialized ribosomes in <i>Bacillus subtilis</i> <i>Project is carried out within the FIRST TEAM programme of the Foundation for Polish Science</i>
Project description:	<p>Translation regulation during temperature downshift. Bacteria have evolved a number of mechanisms to cope with hostile conditions. Translation in lower temperatures is problematic due to constraints imposed by the secondary structures of nucleic acids. Ribosome is more rigid, mRNAs may adopt unfavourable secondary structures, sequestering regulatory elements such as Ribosome Binding Site (RBS) or translation start-site. In this task, we will focus on Cold Shock Proteins (Csp's). It is not known whether Csp's bind directly to the ribosome to aid efficient translation, although it was shown that they associate with the ribosomal fraction. We would like to address this issue and investigate whether Csp's become ribosomal components during translation in low temperatures.</p> <p>We plan to apply high resolution, high-throughput methods including next generation deep sequencing of the entire transcriptome and translatoome to investigate specialization of translation during temperature downshift.</p> <p>Results collected in this task will allow us to describe molecular mechanisms driving translational machinery in low temperatures. We will gain new insights into how bacterial cells are coping with such stressful conditions and what is the interplay between Csp and the ribosome. Such knowledge adds not only to the fundamental understanding of translation per se, but also, may reveal potential novel target for antimicrobials as Csp are ubiquitously expressed in bacteria at various temperatures. Understanding molecular details of cold shock/temperature downshift adaptation will reveal whether such system can be used for further applications.</p>
Key responsibilities include:	<ol style="list-style-type: none"> 1. Investigation of factors altering sporulation. Genetic modifications of <i>Bacillus subtilis</i> (deletions). 2. Work with RNA including isolation, libraries preparation for deep sequencing. 3. Cloning and protein expression.

	4. In vivo and in vitro verification of the results acquired from next generation sequencing.
Profile of candidates/requirements:	<ol style="list-style-type: none"> 1. Student in biochemistry, biology, molecular biology or any related field of life sciences. 2. Training in basic molecular biology and biochemistry techniques. 3. Experience working with RNA, Next generation sequencing technique, basic NGS data analysis skills 4. Good command in English. 5. Enjoy working in a highly collaborative and interdisciplinary environment.
Required documents:	<ol style="list-style-type: none"> 1. CV 2. Motivation letter. Short summary of scientific achievements/experiences 3. Description of studies / Transcript of records 4. Declaration of consent for personal data processing*
We offer:	<ul style="list-style-type: none"> • Training in handling of Bacillus subtilis. • Training in RNA technologies, including ribosome isolation, toe-printing, RNA isolation, in vitro translation assays, high-throughput next generation sequencing techniques (NGS). RNA-seq, ribosome profiling. • Training in genetic manipulations. Cloning and recombinant proteins expression, enzymatic assays.
Please submit the following documents to:	agata.starosta@ibb.waw.pl (title of the message 'Student FIRST TEAM')
Application deadline:	25 August 2021
For more details about the position please visit (website/webpage address):	https://ibb.edu.pl/pracowania-badawcza/dr-hab-agata-starosta/
Euraxess job/stipend offer (in case of PhD and postdoc positions):	

*Please include in your offer:

"I hereby give consent for my personal data included in my application to be processed for the purposes of the recruitment process under the Personal Data Protection Act as of 29 August 1997, consolidated text: Journal of Laws 2016, item 922 as amended."