



## Open PhD position

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LABORATORY / UNIT:

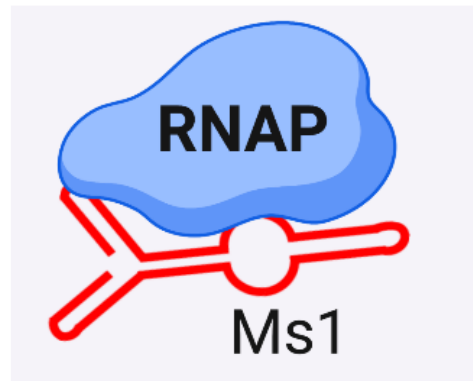
Laboratory of Microbial Genetics and Gene Expression

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### New RNAs that regulate transcription in bacteria

in Laboratory of Microbial Genetics and Gene Expression, Institute of Microbiology of the Czech Academy of Sciences, Prague, Czech Republic

Bacterial transcription is an important target of antibiotics. In nature, bacteria have evolved their own mechanism to regulate RNA polymerase (RNAP) by 200 – 400 nt long, structured RNAs that associate with RNAP. We have established a new protocol, a combination of RNA immunoprecipitation and next generation sequencing (RIP-seq) and identified many species-specific RNAs that interact with RNAP.



We plan to reveal the function of these regulatory RNAs and describe their role in bacterial transcription.

#### Project description:

PhD student will perform RIP-seq in *Bifidobacterium bifidum*, a specie where no RNAP-associated RNA has been identified yet to reveal novel regulatory RNAs. We will prepare these RNAs *in vitro*, identify their secondary structure and compare them with RNAs found in other species. This will help us to define regions necessary for RNAP binding.

As a model organism, we use *Bacillus subtilis*, *Escherichia coli*, *Corynebacterium glutamicum*, *Streptomyces coelicolor* and *Mycobacterium smegmatis*. For our projects, we use immunoprecipitations, CRISPR-based gene depletions, RNA-seq or ChIP-seq, super-resolution microscopy (SIM), *in vitro* transcriptions or cryo-EM.

Please send your application with CV by 13 April 2023. Position available from 1 June 2023 at the earliest.

We are a group of friendly people. Join us!

Found it interesting? Please contact: Jarmila Hnilicová ([hnilicova@biomed.cas.cz](mailto:hnilicova@biomed.cas.cz))

