



BISON GUEST LECTURE

Regulation of transcription elongation in E. coli by the RNA polymerase – RNA interactome

CEITEC MU

Kamenice 5, Brno

Building A35, Room 145

26/9/2016

START: 14.00

**Invited lecturer: Prof. Renée Schroeder,
University of Vienna, MFPL**

Transcription elongation is not a smooth process and the speed of elongation depends on the underlying gene sequence. Cellular RNA polymerase (RNAP) is a major target for regulatory factors and signals. In search for RNA molecules that modulate transcription by direct interaction with RNAP, we deep-sequenced an E. coli genomic library enriched for RNAP-binding RNAs. Over 15,000 natural RNAP-binding aptamers (RAPs) were mapped to the E. coli genome. Using different in vitro and in vivo techniques we characterize RAPs that attenuate transcription of the nascent RNA. The corresponding mechanism is based on RAP-dependent RNAP pausing promoting premature Rho-dependent termination events under relevant biological conditions. RAPs also regulate transcription interference from the antisense strand. Our work uncovers a broad class of cis-acting RNA signals that modulate RNAP activity during elongation and termination. These pervasive RNA regulatory elements represent a conceptually novel mechanism by which gene expression is regulated in bacteria.

More information about the lecture [HERE](#).

