4th year colloquium

How does RNA regulate gene expression?

Carrie Bernecky
ISTA

Host: Martin Loose

All cellular life depends on the regulated expression of genetic information. This information is stored in genomic DNA, which must be transcribed into RNA before it can be used. RNA is thus an important focal point for gene expression regulation, and can even have regulatory activity itself. However, how RNA is made and how it regulates gene expression is still incompletely understood. Many RNA-containing complexes are flexible, modular, and lowly abundant, making them challenging targets for study. Our group combines cryo-electron microscopy and biochemical techniques to elucidate the mechanisms of action of RNA regulatory complexes.In my seminar, I will present two examples of RNA-based regulation. First, I will describe how a human noncoding RNA can directly inhibit gene expression. After cellular stress, this RNA becomes highly abundant and can help shut down new RNA production. Second, I will describe how the recognition of RNA structure stimulates human immune signaling pathways. These pathways are important for defense against pathogens, as well as contributors to autoimmune disease. Altogether, through our studies we gain an understanding of how RNA-protein complexes assemble and regulate cellular RNA metabolism.

Monday, March 20, 2023 11:30am - 12:30pm
Raiffeisen Lecture Hall

This invitation is valid as a ticket for the ISTA Shuttle from and to Heiligenstadt Station. Please find a schedule of the ISTA Shuttle on our webpage: https://ista.ac.at/en/campus/how-to-get-here/ The ISTA Shuttle bus is marked ISTA Shuttle (#142) and has the Institute Logo printed on the side.