



14 APRIL

11.30 A.M.
ROOM A206
POVO 1

KATHARINA HÖFER

PHILIPPS-UNIVERSITÄT MARBURG

The art of RNAylation: linking nucleic acids to proteins with natural precision to regulate cellular processes

Nucleic acids and proteins are essential biomolecules with distinct biological roles. Nucleic acids, including DNA and RNA, are crucial for genetic information storage and manipulation, while proteins exhibit diverse structures and functions.

This study introduces **RNAylation**, a novel mechanism facilitated by the **bacteriophage T4 ADP-ribosyltransferase (ART) ModB**, which covalently **links RNA to specific proteins**, such as ribosomal proteins in *Escherichia coli*. We aim to apply RNAylation for engineering nucleic acid-protein conjugates to **enhance targeted delivery** and **modulation of cellular processes** in eukaryotes. Our objectives include defining design principles for RNAylated proteins, developing delivery strategies, and regulating gene expression in vivo.

This work not only advances **our understanding of RNA-protein interactions** but also positions **RNAylation as a promising tool for next-generation RNA therapeutics and synthetic biology applications**.

CIBIO EXTERNAL SEMINAR



UNIVERSITÀ
DI TRENTO

Dipartimento di
Biologia Cellulare, Computazionale e Integrata - CIBIO



DEPARTMENT OF CELLULAR, COMPUTATIONAL
AND INTEGRATIVE BIOLOGY - CIBIO
VIA SOMMARIVE, 9
38123 - POVO (TN)
COMUNICAZIONE.CIBIO@UNITN.IT