



UNIVERSITÀ
DI TRENTO

Dipartimento di
Biologia Cellulare, Computazionale e Integrata - CIBIO

CIBIO
EXTERNAL
seminar

20 APRIL

at 2 p.m.

Room A110, Povo 1

RNA SENSORS DURING DEVELOPMENTAL TRANSITION IN HEMATOPOIESIS

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Repetitive elements like transposable elements (TEs) and other simpler repeats are dispersed throughout the genome and consist more than one third of it in multiple species. For many years this part of the genome was considered as “junk”, but it has lately become clear that **many functions can be attributed to repetitive elements**. Developmental processes and cellular states exhibiting high plasticity are often accompanied by expression of repetitive elements. Here we show that **repetitive elements are transcribed during hematopoietic stem cell development and chemotherapy-induced regeneration**. Repetitive element RNAs act as signals for innate immune receptors of the RIG-I-like receptor family. Activation of these receptors titrates the induction of sterile inflammatory signals that enhance hematopoietic stem cell development and chemotherapy-induced regeneration. We also show the **role of RIG-I-like receptors during aging**. Thus, RNA sensing of repetitive elements actively shapes cellular transitions.

Contacts

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