ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

DIPARTIMENTO
DI FARMACIA
E BIOTECNOLOGIE

AVVISO DI SEMINARIO

Il giorno **25 Febbraio 2025**
alle ore **14:30**

Prof.ssa Anna Cereseto

Professoressa Ordinaria di Biologia Molecolare. Department of Cellular, Computational and Integrative Biology, University of Trento, Trento, Italy

(ospite di Prof. Giovanni Perini)

terrà un seminario in lingua inglese dal titolo:

Advancing genome editing technologies for therapeutic applications

Area tematica:
Genomics

in presenza:
Aula Magna Carinci, via Belmeloro 8, Bologna BO

e in streaming:
https://teams.microsoft.com/l/meetup-join/19%3aN09c0NIyEssBnF7ObCyDOQwkgDWm1qdd9f7F2nJV9fw1%40thread.tacv2/1631519544944?context=%7b%22Tid%22%3a%22e99647dc-1b08-454a-bf8c-699181b389ab%22%2c%22Oid%22%3a%225a941351-ef41-4aa4-8771-fa50a6d62ca1%22%7d

Il seminario è organizzato nell'ambito del Corso del Dottorato in BCM.
Colleghi e studenti sono cordialmente invitati

ABSTRACT

Genome editing technologies hold great promise for clinical development, offering the potential to transform the treatment landscape for genetic disorders and diseases targeted by immunotherapies. By enhancing the precision and efficiency of gene therapies, these technologies lay the foundation for more personalized and advanced treatments. However, several challenges hinder the widespread adoption of genome editing in clinical practice. These challenges stem primarily from the limitations of CRISPR-based tools, including their low compatibility with commonly used delivery vectors, constraints on target sequences, immunogenicity, and unpredictable efficiency and precision across the genome.

Our recent work has focused on overcoming these obstacles by employing two key strategies: the discovery of novel CRISPR systems and the use of directed evolution approaches, coupled with molecular engineering to improve compatibility with gene therapy applications. In this presentation, I will outline the discovery pipeline we've developed to advance new genome editing tools and explore their potential applications for the treatment of cystic fibrosis, one of the most prevalent and debilitating genetic diseases.

BIOGRAPHICAL SKETCH

Anna Cereseto, PhD is the Principal Investigator of the Laboratory of Molecular Biology at the University of Trento and serves as the Vice Director of the Department CIBIO. She earned her degree in Biological Sciences from the University of Genoa in 1990, after which she moved to the National Institutes of Health (NIH) in Bethesda, MD, USA, to study the molecular biology of retroviruses. In 1998, Dr. Cereseto undertook a postdoctoral position at Cornell University and became an instructor at the Institute of Gene Therapy at Mount Sinai School of Medicine in New York. In 2000, she returned to Italy, working at the Istituto Superiore di Sanità (ISS) in Rome before joining the International Centre for Genetic Engineering and Biotechnology (ICGEB) in Trieste. In 2003, Dr. Cereseto moved to the Scuola Normale Superiore (SNS) in Pisa as an Assistant Professor, and in 2010, she became a Professor at the University of Trento. At Trento, she leads a biotechnology research group focused on genome editing for gene therapy, with a particular emphasis on cystic fibrosis.

In 2018, she founded Alia Therapeutics, a startup focused on developing genome editing-based treatments. Dr. Cereseto has published over 60 scientific papers, and her research is supported by the Italian Ministry of Research, the European Union, and the Cystic Fibrosis Foundations in both Italy and the US.