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Italiadomani
PIANO NAZIONALE
DI RIPRESA E RESILIENZA

S6

Spoke 6: RNA Drug Development

Led by National Research Council of Italy (CNR)

9-10 December 2024 - Milan, Campus IFOM-IEO

3rd Meeting *organized by*

Istituto Italiano di Tecnologia (IIT)

IFOM Istituto Fondazione di Oncologia Molecolare ETS

9th December 2024

9:30 - 10:30 Registration (hall)

10:30 - 12:15 Introductive Session - [RNAs – From Theory to Practice](#)

Chair: Gabriella Viero, Silvestro Conticello

10:30-10:45| *Piero Carninci* - Long non-coding RNA and genome regulation (OC)

10:45-11:00| *Francesco Nicassio* - Insights in Human Transcriptome by Long Read Nanopore Sequencing Technology

11:00-11:15| *Alberto Diaspro* - The artificial molecular microscope

11:15-11:30| *Emilio Cusanelli, Marie-Laure Baudet* - Innovative methodologies and cellular models for the study of telomeric and circular RNAs in living cells

11:30-11:45| *Antonella Teramo* - A platform for the next-gen RNA-based therapies for hematological disorders

11:45-12:00| *Pietro Laneve* - Deciphering and Tackling Medulloblastoma with Long Noncoding RNAs

12:00-12:15| *Fabrizio d'Adda di Fagagna* - RNA therapeutic approaches of age-related diseases

12:15-13:15 Tavola Rotonda

Modera: Cristina Ferrario (CESJ)

Giuseppe Biamonti, Stefania Bortoluzzi, Fabrizio D'Adda di Fagagna, Francesco Nicassio,
Alfredo Nicosia

13:15-14:30 lunch break and networking

14:30-16:00 Session I - Editing and ncRNA

Chair: Francesco Nicassio, Giuseppe Biamonti

14:30-14:45| *Fabio Lauria* - Beyond generation epitranslational-based tools for biomarker and target discovery

14:45-15:00| *Alessandro Provenzani* - BaC: Methods for measuring the translational process in RNA therapies (OC)

15:00-15:15| *Ernesto Picardi* - Harnessing endogenous ADARs for correcting disease-causing point mutations

15:15-15:30| *Beatrice Bodega* - Retrotransposable elements dynamics regulate T cell function within the tumor microenvironment (OC)

15:30-15:45| *Cem Nass* - Fine-tuning Site-directed RNA Editing: Controlled gRNA Synthesis with T7 RNA Polymerase

15:45-16:00| Q&A

16:00-17:00| Session II - RNA delivery

Chair: Roberto Improta, Laura Polisenio

16:00-16:15| *Roberto Corradini* - POLYfunctional PNAs for Precision RNA Targeting and modulation of interactions with proteins-POPnART project (OC)

16:15-16:30| *Menotti Ruvo* - Protein-based delivery of ASOs and other nucleic acid-like drugs

16:30-16:45| *Laura Poliseno* - Attenuated *Listeria monocytogenes* as delivery platform for anticancer drugs

16:45-17:00| Q&A

17:00-18:00| Session III - New Technologies (I)

Chair: Michele Saviano, Walter Cabri

17:00-17:15| *Laura Cerchia* - Development of nuclease-resistant RNA aptamer-based drugs and applications for cancer treatment

17:15-17:30| *Massimo Olivucci* - Progress on the design and synthesis of a photoresponsive RNA aptamer (a hammerhead ribozyme)

17:30-17:45| *Amelia Cimmino* - Development of targeting approaches specific for oncogenic lncRNAs in bladder cancer

17:45-18:00| Q&A

Social Dinner

10th December 2024

9:30-10:30| session IV - New Technologies (II)

Chair: Francesco Nicassio, Giuseppe Biamonti

9:30-9:45| *Sara Spaziani, Tania Caputo* - New frontiers in gene therapy: development of innovative multimodal imaging techniques (fluorescence/Raman) for the subcellular localization of free and nanovector-encapsulated oligonucleotide sequences

9:45-10:00| *Francesco Ricci* - Nucleic acids-based devices and structures for imaging purposes

10:00-10:15| *Tommaso Felicetti* - Innovative Methods for RNA-Targeting Molecules Evolution (OC)

10:15-10:30| Q&A

10:30-11:45| Session V - New Technologies (III)

Chair: Michele Saviano, Walter Cabri

10:30-10:45| *Martina Mascolo* - RNA aptamers as cancer therapeutics

10:45-11:00| *Walter Cabri* - Stereopure peptides, ribotacs and PNA sustainable synthesis, an update

11:00-11:15| *Concetta Avitabile* - Unlocking the Potential of Peptide Nucleic Acids for Next-Generation Therapeutic and Diagnostic Applications

11:15-11:30| *Giuseppe Vicidomini* - Photon-Resolved Microscopy: A Novel Tool to Study RNA Interactions

11:30-11:45| Q&A

12:00-12:30| Rosario Rizzuto - Future perspectives and CN3 sustainability

12:30 - 13:00| Discussion

13:00-14:30 lunch break and networking

14:30-16:00| Session VI - RNA therapies

Chair: Stefania Bortoluzzi, Alfredo Nicosia

14:30-14:45| *Guendalina Froechlich* - Novel mRNA immunomodulators

14:45-15:00| *Laura Rigon* - Development of a nanoparticle-mRNA therapy to enhance albumin production in experimental models of liver cirrhosis

15:00-15:15| *Claudia Ghigna* - Aberrant alternative splicing in cancer: molecular mechanisms and therapeutic perspectives

15:15-15:30| *Roberto Cusano* - Caratterizzazione di esperimenti di RNA therapy mediante applicazioni NGS (OC)

15:30-15:45| *Salvatore Pisanu* - Proteomic Applications meet RNA-based Gene Therapy in the "SCOPERTA" project (OC)

15:45-16:00| Q&A