

Esposoma: dai geni all'ambiente

Exposome: from genes to environment

Convegno

Roma, 13-14 Novembre 2024

CNR, Sede Centrale – Aula Convegni, Piazzale Aldo Moro, 7

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Lo studio dell'esposoma è volto a comprendere come il complesso dei fattori ambientali a cui è esposto un individuo nel corso della vita possa incidere sulla sua salute. Lo studio dell'esposoma umano nella sua totalità è essenziale per identificare e valutare contemporaneamente i molteplici fattori di rischio ambientale, così da poter stimare più accuratamente quali costituiscano le cause concomitanti delle diverse condizioni di salute.

L'analisi dell'esposoma esterno, ovvero l'insieme degli stimoli derivanti da fattori come l'inquinamento atmosferico, clima, stili di vita, si integra con lo studio dell'esposoma interno, ovvero le risposte biologiche ai fattori esterni, oggi rilevabili grazie alle tecniche molecolari e "omiche". L'insieme delle esposizioni e le relative conseguenze vanno poi calate nei diversi contesti socioeconomici al fine di individuare possibili meccanismi di disegualianza sociale in termini di tutela della salute. Lo studio dell'esposoma consentirà quindi una valutazione dei rischi connessi alla salute umana in un'ottica "One Health" promuovendo l'applicazione delle informazioni ottenute da questi studi alle politiche di prevenzione per la salute pubblica.



The study of the exposome is aimed at understanding how the complex of environmental factors to which an individual is exposed throughout life can affect his or her health. The study of the human exposome in its entirety is essential to identify and simultaneously evaluate the multiple environmental risk factors, so as to be able to more accurately estimate what constitute the concomitant causes of the different health conditions.

The analysis of the external exposome, i.e. the set of stimuli deriving from factors such as air pollution, climate, lifestyles, is integrated with the study of the internal exposome, i.e. the biological responses to external factors, today detectable thanks to molecular and "omics" techniques. The set of exposures and the related consequences must then be considered in the different socioeconomic contexts in order to identify possible mechanisms of social inequality in terms of health protection. The study of the exposome will therefore allow an assessment of the risks associated with human health from a "One Health" perspective, promoting the application of the information obtained from these studies to prevention policies for public health.

Programma Mercoledì 13 Novembre 2024

08.45 Registrazione

09.15 Saluti – Giovanni Maga, Direttore DSB

09.30 **Keynote Lecture:** Giuseppe Macino, Università di Roma “La Sapienza”
“3-D Spatial Transcriptomics Interdisciplinary Platform for Precision Medicine”

Invited Speaker: Christine Nardini, CNR-IAC
10.00 “The Greater Inflammatory Pathway – definition, implementation and experimental exploration”

Mario Chiariello, CNR-IFC
10.25 “Mapk15 Protects Against Diet-Induced Progressive Metabolic Dysfunction-Associated Steatotic Liver Disease”

10.45 Coffee break

Invited Speaker: Andrea Castagnetti, Wellmicro
11.15 “From One Health to One Ecosystem: a metagenomic multi-kingdom approach for a better microbiome characterization”

Stefano Farioli Vecchioli, CNR-IBBC
11.40 “Inhalation of nanoplastics in the mouse model: tissue bio-distribution and effects on the olfactory system”

Alessandro Giammona, CNR-IBSBC
12.00 “A novel strategy for glioblastoma treatment by natural bioactive molecules showed a highly effective anti-cancer potential”

Valeria Longo, CNR-IRIB
12.20 “Pollutants Modulate Innate Immune Response Via Extracellular Vesicles”

Maria Russo, CNR-ISA
12.40 “Curcumin, A Dietary Phytochemical, Activates Cellular Antioxidant Response In Human Myeloid Cells At Chemopreventive Doses”

13.00 Lunch

14.40 **Invited Speaker:** Serena Sanna, CNR-IRGB
“Understanding human diseases and health from the microbiome perspective”

15.05 **Invited Speaker:** Salvatore Oliviero, Università di Torino
“DNA methylation in embryonic stem cells restricts cell fate”

Lorena Pochini, CNR-IBIOM
15.30 “Screening Of Environmental Heavy Metal Interactions With Drug Transporters”

Viviana Triaca, CNR-IBBC
15.50 “Short-term CSFR1 inhibition by PLX3397 induces phagocytic microglial improving amyloid clearance from presynaptic terminals and rescuing synaptic plasticity”

Paola Ungaro, CNR-IEOS
16.10 “The histone methyltransferase SMYD1 is induced by thermogenic stimuli in adipose tissue”

Cristina Marchetti, CNR-IBPM
16.30 “A small molecule with a big effect: microRNA-34a selectively regulates the response to stressful environmental stimuli”

16.50 Conclusioni



Programma Giovedì 14 Novembre 2024

- 09.30 **Keynote Lecture:** Cornelius Gross, EMBL
"How does context and experience shape social fear circuits?"
- 10.00 **Invited Speaker:** Sabrina Molinaro, CNR-IFC
"Lifestyle Choices: The Key to Health in the 21st Century"
- 10.25 **Invited Speaker:** Angelo Fontana, CNR-DSCTM
"Immunological modulation by "natural" small molecules"
- 10.50 **Coffee break**
- 11.20 Elvira De Leonibus, CNR-IBBC
"From Exposome to Outcome: Personalized Strategies Against Dementia Through Lifestyle Interventions"
- 11.40 Mariangela de Robertis, CNR-IBIOM
"Dietary fat content is crucial to modulate tumor-related gut integrity and circulating microbiome in colorectal cancer"
- 12.00 Tommaso Giordano, CNR-IBE
"Dense sensor networks and satellite data to map environmental hazards in urban areas"
- 12.20 Eugenia D'Atanasio, CNR-IBPM
"Exposome from our past: what ancient and modern genomes can teach us?"
- 12.40 Gaspare Drago, CNR-IRIB
"The Exposome Concept In Birth Cohort Research: The Neho Study"
- 13.00 **Conclusioni e saluti**

Comitato Scientifico/Scientific Committee

Giovanni Maga, Direttore del Dipartimento

I Direttori degli Istituti afferenti al Dipartimento

Organizzazione del convegno/Conference organization

Tiziana Borghini

Valentina Ferrari

Elsa Fortuna

Andreina Fullone

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Arianna Moretti

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