



UNIVERSITÀ DEGLI STUDI  
DEL SANNIO Benevento

DST

DIPARTIMENTO DI SCIENZE E TECNOLOGIE

Dottorato di Ricerca in Scienze e Tecnologie per l'Ambiente e la Salute

## WORKSHOP

### Shaping the Future of Cannabinoid-Based Research and Drug Discovery

LUNEDÌ 30 MARZO 2026 ORE 13.00-15.00

Aula 7C - CUBO, Via dei Mulini, Benevento

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MTID=ma4146dca56452e1a80d80b4269e8fec1](https://unisannio.webex.com/unisannio/j.php?MTID=ma4146dca56452e1a80d80b4269e8fec1)



#### Programma

- 13.00 – 13.30 ***Unlocking the Therapeutic Potential of the Endocannabinoid System: Insights and Advances in Drug Discovery.***  
**Uwe Grether** – F. Hoffmann-La Roche Ltd., Basel
- 13.30 – 14.00 ***Exploring Cannabinoid Synergies in Cancer: From Preclinical Models to Therapeutic Vision.***  
**Alessia Ligresti** – CNR, Institute of Biomolecular Chemistry
- 14.00 – 14.30 ***Beyond Affinity: Binding Kinetics and Allosteric Modulation in GPCRs – Implications for the Endocannabinoid System.***  
**Laura Heitman** – Leiden University
- 14.30 – 15.00 ***Functionally Selective CB1 Receptor Modulators in Metabolic Disorders: Implications for Substance Use Disorders.***  
**Szabolcs Dvorácskó** – HUN-REN Biological Research Centre

#### ABSTRACT

This symposium brings together leading experts to explore recent advances in the endocannabinoid system and its therapeutic potential. By integrating medicinal chemistry, molecular pharmacology, and translational research with emerging approaches in artificial intelligence and data science, the session provides a forward-looking perspective on cannabinoid-based drug discovery. Computational modeling and data-driven approaches are increasingly shaping the identification and optimization of novel compounds, as well as the understanding of receptor dynamics and complex biological networks. The contributions will span from drug design strategies and cannabinoid synergism in cancer to GPCR modulation and selective CB1 targeting in metabolic and substance use disorders. Overall, the symposium highlights how interdisciplinary and data-driven methodologies can accelerate the development of innovative therapeutic solutions for complex diseases.



**Uwe Grether, PhD**

Distinguished Scientist & Project Leader, F. Hoffmann-La Roche Ltd., Basel, Switzerland. Dr. Uwe Grether is a highly accomplished organic chemist with over 24 years of experience in drug discovery and development. At Roche, he leads multidisciplinary teams and has successfully driven multiple projects to advanced clinical stages, including Phase III trials. His expertise spans chemical biology, AI-driven drug discovery, and high-throughput experimentation. He has made major contributions to pharmaceutical innovation, with over 100 patents and 100+ publications in leading journals such as *Nature Chemistry* and *Nature Communications*. Dr. Grether has received several prestigious awards, including the PHOENIX Pharma Science Prize (2025) and the Leo Sternbach Award for Medicinal Chemistry Innovation. He is widely recognized for his leadership in translational research and his impact across academia–industry collaborations



**Alessia Ligresti, PhD**

Research Director, Institute of Biomolecular Chemistry, National Research Council (CNR), Italy.

Dr. Alessia Ligresti is a biochemical pharmacologist specializing in chemical biology and translational research. She leads a research team focused on cannabinoid-based therapeutic strategies for onco-metabolic, neurodegenerative, and complex diseases. Her research integrates molecular pharmacology and mitochondrial biology, with emphasis on the endocannabinoid system as a multi-target platform for drug discovery. She has authored over 136 publications and is co-inventor of two patents. She is the recipient of several awards and is listed among the world's top 2% scientists.



**Laura H. Heitman, PhD**

Professor of Molecular Pharmacology, Leiden University, The Netherlands. Prof. Laura H. Heitman is Full Professor of Molecular Pharmacology at Leiden University. Her research focuses on drug–receptor interactions, particularly GPCRs, including binding kinetics, biased signaling, and allosteric modulation. She has authored over 170 publications, and

is inventor on several patents. She has received multiple international awards and competitive research grants.



**Szabolcs Dvorácskó, PhD**

Research Associate, Institute of Biochemistry, HUN-REN Biological Research Centre, Szeged, Hungary. Dr. Szabolcs Dvorácskó is a researcher in biochemical pharmacology focusing on cannabinoid and opioid receptor biology and drug discovery for metabolic and neurological disorders. He obtained his PhD from the University of Szeged and was a postdoctoral fellow at the National Institutes of Health (USA). He received several awards, including the János Bolyai Research Scholarship.