



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

DIPARTIMENTO
DI FARMACIA
E BIOTECNOLOGIE

AVVISO DI SEMINARIO

Il giorno **19 Febbraio 2025**
alle ore **14:30**

Prof.ssa Angela Casini

Chair of Medicinal and Bioinorganic chemistry, Department of Chemistry, School of Natural Sciences, Technical University of Munich (TUM)
(ospite del Prof. Stefano Ciurli)

terrà un seminario in lingua inglese dal titolo:

Broadening the Scope of Medicinal Inorganic Chemistry: Unconventional Design Concepts for Therapy and Imaging

Area tematica:

Drug discovery and development;
Bioinorganic Chemistry

in presenza:

Aula A Farmacologia Via Irnerio 48, Bologna BO

Colleghi e studenti sono cordialmente invitati

ABSTRACT

The field of medicinal inorganic chemistry is a burgeoning subfield of medicinal chemistry that focuses on the development of metal-based diagnostic and therapeutic agents. In this lecture, I highlight recent strategies in the area of metallodrug development which I consider particularly intriguing, also from a mechanistic perspective, based either on catalytic pathways or purely relying on noncovalent interactions of organometallic compounds with different pharmacological targets. For example, gold-based complexes, either as molecular species or integrated into supramolecular entities will be presented, providing insights into their reactivity in biological environments and unique mode of pharmacological action. In addition, in the nuclear medicine domain, the emerging field of supramolecular (radio-)theranostics will also be addressed, in which the classical radiopharmaceutical design is revisited and implemented by self-assembly strategies.

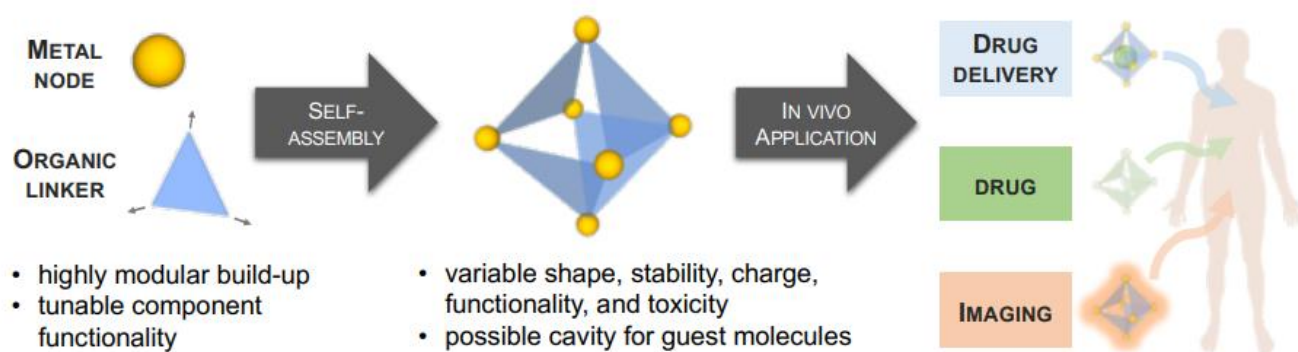


Figure 1 – Self-assembly of 3D-metallacage structures and their possible applications in medicine.

BIOGRAPHICAL SKETCH

Angela Casini is Liesel Beckmann Distinguished Professor and Chair of Medicinal and Bioinorganic Chemistry at the Technical University of Munich (TUM, Germany). Since 2021, she is holding an interim position as the Chair of Pharmaceutical Radiochemistry. Her primary affiliation is the TUM School of Natural Sciences, but she also holds a secondary affiliation at the TUM School of Medicine and Health. Additionally, she is a member of the Steering Committee of the TUM Center for Smart Drug Design (CSDD), a core member of the Munich Institute of Data Science (MDSI), and an associate researcher of the TUM Catalysis Research Centre (CRC). Angela completed her PhD in Chemistry at the University of Florence (Italy) in 2004, and, afterwards, moved to EPFL (Switzerland) as principal investigator funded by the Swiss National Science Foundation. Between 2011-2015, she has been assistant professor at the University of Groningen (The Netherlands), holding a Rosalind Franklin Fellowship. Between 2015-2019, she became Chair at Cardiff University (UK), before taking up her current position at TUM in 2019. She is recipient of many awards, including the 2019 ACS Inorganic Lectureship Award and the 2012 European Medal for Biological Inorganic Chemistry. Between 2016-2019 she was Hans Fischer Senior Fellow of the prestigious Institute of Advanced Study at the Technical University of Munich. In 2023, she has been elected member of the European Academy of Sciences. Her research focuses on the study of the role of metal ions in biological systems and of the mechanisms of action of organometallic anticancer agents. Furthermore, novel applications for metal-based compounds and supramolecular coordination complexes are explored in various domains of chemical biology, theranostics, drug delivery and medicine. In these fields, she has authored more than 280 publications (including 12 book chapters) with an H-index of 77.