

- titolo: Glycans in health and disease from molecular mechanisms to biomedical applications
- affiliazione: CNR ICB - IRIB
- breve abstract in inglese (max 250 parole):

Glycans are key regulators of health and disease. This seminar will provide a broad overview of their roles, from fundamental molecular mechanisms to translational biomedical applications. As essential structural and informational molecules, carbohydrates play critical immunological and structural roles at interfaces such as the host-microbes interface and the tumor microenvironment.

The structural mimicry and immunological properties of pathogen-associated glycans make them ideal targets for vaccines design. I will discuss the rational development of carbohydrate-based vaccines, focusing on conjugate vaccine technology (a strategy proven highly successful against bacterial diseases like pneumonia and meningitis).

Finally, the seminar will explore the frontier of glycans research, including their roles in modulating the microbiome interactions with the host, their utility as biomarkers for cancer, and their function as modulators in the tumor microenvironment and other diseases.

By bridging fundamental glycoscience with applied research, deciphering and understanding the "glycan code" becomes essential for developing next-generation diagnostics, therapeutics, and prophylactics, translating molecular insights into improved human health outcomes.

- breve CV in inglese (max 100 parole):

Fabrizio Chiodo is a research at the Italian National Research Council (CNR). His work focuses on innate and adaptive immune responses to non-mammalian glycoconjugates, primarily for vaccine development against pathogens. He earned his PhD in San Sebastian, Spain, with a research stay at the Amsterdam Medical Center. His independent research career began in 2014 at Leiden University. He leads key international collaborations, as an associate researcher at Cuba's Finlay Institute, where he contributed to the design of the Soberana SARS-CoV-2 vaccines. Previously, he had senior research positions at Amsterdam Infection and Immunity Institute and Leiden University Medical Center.