SCIENTIFIC SEMINAR



Alba Silipo University of Naples Federico II Naples (Italy)

Decryption of microbial glycans unveils structure to function relationship

The evaluation of the structure and host recognition of glycoconjugates from microbial cell envelope is key to two interconnected pillars: i) to provide structural insights into the mechanisms governing microbial glycans' recognition and binding by host cognate receptors and ii) to evaluate their contribute to the microbial cell survival as well as their interaction with host receptor(s). The combined use of complementary approaches, including NMR spectroscopy, computational techniques and biophysical methodologies is essential to unravel the structure, conformation and molecular recognition features of microbial glycoconjugates as well as their interaction with eukaryotic host.

The detailed (bio)-molecular characterization of microbial glycoconjugates (as Gramnegative LPS) and molecular insights into the mechanisms that govern their interaction with host receptors is of primary importance to "tune" the bacterial cell surface initiation or suppression of inflammatory response. Various examples will be here described, with detailed description of the advantages and drawbacks of the application of the different methods and techniques.

References

- 1. Marchetti R, Forgione RE, Fabregat FN, Di Carluccio C, Molinaro A, Silipo A. Curr Opin Struct Biol. 2021;68:74-83.2021;
- 2. Di Lorenzo F, Duda KA, Lanzetta R, Silipo A, De Castro C, Molinaro A. Chem Rev. 2021 doi: 10.1021/acs.chemrev.0c01321;
- 3. Belin BJ, Busset N, Giraud E, Molinaro A, Silipo A, Newman DK. Nat Rev Microbiol. 2018;16(5):304-315

CIC DIOGUNE MEMBER OF BASQUE RESEARCH & TECHNOLOGY ALLIANCE Thursday December 15 <u>ZOOM APP</u> 12.00H

