



UNIVERSITÀ DEGLI STUDI DI NAPOLI "FEDERICO II"

Dipartimento di Scienze Chimiche

Dottorato in Scienze Chimiche - XXXVI

***Ph.D. in Chemical Sciences
Cycle XXXVI***

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Research project title:

Microbial Polysaccharides as flexible and renewable resources for innovative applications: structural and functional studies. Acronym: MICROPOLYS

Keywords: Carbohydrate polymers; structural chemistry; biomaterials, immunology.

Research project abstract:

Microbial polysaccharides are a huge, largely untapped, source of materials for sustainable biomedicine and biotechnology. Microbial exopolysaccharides make up the cell walls and are potentially useful products but often with unexplored properties. Furthermore, microbial organisms, in their diversity and susceptibility to undergo genetic manipulations, are the ideal tools to produce raw materials susceptible to further manipulation. The MICROPOLYS PhD project will deal with developing the use of microbial polysaccharides for "bio-signaling" in the following areas: prebiotics, vaccine and vaccine adjuvants, immunostimulants. The proposed research will examine waste polysaccharides, or products from bacteria and microalgae and at the same time develop methodologies (production - isolation - manipulation) that can be translated on other microbes, in order to maximize the product repertoire usable in academia and industry.