

Abstract of Presentation

Biotechnological production and characterization of biomolecules from microbial origin with potential biomedical applications

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The latitudinal and longitudinal positioning of Argentina gives a variety of climatic conditions ranging from the sub-tropical in the north to the sub-antarctic in the south with a coastline extending of about 5,000 km. The terrain has pristine rich plains on the northern half, flat rolling plateau of Patagonia in the south and rugged Andes Mountains on the western border. Encompassing the macroscopic broad diversity in nature, microbial diversity is a very promising source of diverse biological molecules but still almost unexplored. Microbial products of industrial interest could be ranging from metabolites to biomass.

Among metabolites, two major areas of research in the pharmaceutical industries can be distinguished: biopolymers, biocatalyst and their inhibitors.

Biopolymers are offering a myriad of applications in biomedicine from controlled release of drugs, tissue engineering to pharmacological uses. Examples of microbial biopolymers with biomedical applications are alginates, polyhydroxilakanoates, celluloses, gellans, beta glucans, and others.

Also some biocatalysts are currently used for therapeutic applications, and the current trend is expanding. Typical examples are enzyme supplements (*e.g.* digestive enzymes), uses in some pathologies (asparaginase and glutaminases in leukemia, or streptokinase 3 and urokinase 5 for blood clots), and the list can be extended from tissue engineering to metabolic enzymes with many applications.

Isolation and characterization of novel microbial strains from natural sources in Argentina is a challenge to be develop for discover new biomolecules carrying novel attributes useful at several industrial levels in biomedicine.