Bioactive Substances from Medicinal Plants for Metabolic Disorders

Aims & Scope:

The number of individuals suffering with Diabetes Mellitus (DM), particularly type 2 diabetes (T2D), has grown to pandemic proportions. Besides the health issue, this fact is also related with several sociologic and economic problems. The costs associated with DM, and its co-morbidities, are massive and the pressure in National Health Care Systems is enormous. These patients, particularly those with T2D, are primarily advised to alter their diet and exercise regime while taking drug therapy that progresses as the disease becomes more severe. Most of these patients take a multi-agent therapy and though progresses have been made, efforts are mandatory in a search for a “perfect” antidiabetic drug.

In this context, since ancient times plant-derived therapies have been used for the treatment of several diseases, including DM. Indeed, there are several plant-derived products in pharmaceutical industry, thus illustrating the potential of plants to serve as source of compounds that may be useful in human health. In the last years, a growing number of literature has shown that several plants, and their derivatives, present antidiabetic properties. This field has emerged as a hot topic of research and there are a few compounds under investigation that may come to the market in the next years. The benefits of discussing the medicinal chemistry of plants and their emerging potential as source for antidiabetic drugs are rapidly progressing. Thus, we propose to discuss the medicinal chemistry of plants and their possible contribution to the search of new, effective, safe and inexpensive antidiabetic agents to treat DM and its associated co-morbidities. The effect of plant-derived products and phytochemicals in DM associated dysfunctions (cancer, neurodegeneration, reproductive biology, aging, among others) will also be discussed. In summary, we propose to discuss plant’s medicinal chemistry and their possible contribution to treat or attenuate one of the major health challenges in modern societies: DM.

This issue will be prepared to a broad range of scientists, young researchers and students. The topics will be carefully selected to include hot topics on medicinal plants and their antidiabetic potential. This issue will contribute to a further understanding of how natural-based therapies may be used for the treatment of DM and its co-morbidities. It will also discuss the medicinal chemistry of plants and it will elucidate molecular targets for new drugs development for antidiabetic therapies.

Keywords: Diabetes Mellitus, biomaterials, surface chemistry, anti-biofouling
Sub topics:

- Biomaterials for fabrication medical devices;
- Prosthetic tubular devices;
- Surface chemistry;
- Anti-adherent, anti-biofouling and antibiofilm surfaces;
- Challenges of drug delivery systems for manufacturing medical devices;
- Characterization tools of surfaces

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