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Metal-peptidic Bioconjugates: Medicinal Applications

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Introduction

Metal-based scaffold conjugation to peptides, proteins, or antibodies enables systemic targeting of these payloads to specified areas in the body, such as target cells/tissues (e.g., cancer) and subcellular compartments, for either treatment or imaging. This Topical Review provides an overview of the various chemical methods for generating metal-peptidic bioconjugates for biomedical applications, with an emphasis on the sorts of chemical functionalities employed to directly or indirectly attach the medication to the peptide. The creation of extremely efficient and selective bioconjugation processes that function under moderate, peptide-compatible conditions is key to all conceivable techniques. Selected instances are emphasised for each technique, with a special emphasis on research revealing the therapeutic effects of metal-peptidic conjugates in cancer treatment. [1].

Description

The maximum porosity, solubility and viscoelastic characteristics were found in freeze-dried chia seed mucilage, indicating that the recovery stage should be effectively tuned to manage the physicochemical properties of mucilage in order to meet the demands of industrial or technical applications. Atomization speed and intake temperature have been identified as crucial variables that must be properly managed during spray drying. Wang, Li, Wang, Li and Adhikari investigated the effect of different drying processes on the functional properties of flaxseed mucilage. The best mucilage with emulsifying and foaming capabilities was obtained by ethanol precipitation and oven drying (105°C). SD, on the other hand, had the least influence on mucilage colour.

The pH of aqueous mucilage solution is a key element in determining its potential use, stability and physiological activity. Mucilage is often composed of neutral and acidic sugars, with the resulting mucilage polymer having varying pH values. Mucilage derived from cladodes of Opuntiadillenii [2,3], for example, is neutral, but the ratio of the neutral to acidic sugar portion in flax mucilage varies depending on cv. type. The rheological behaviour of certain macromolecular systems is particularly interesting in various technical processing, handling and application.

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Inflammation is not a disease condition in and of itself, but it is seen in the evolution of all acute and chronic diseases, including wounds, diabetes, asthma, arthritis and cancer. The body's defensive reactions to cellular damage/injury are inflammation and discomfort. The progression of inflammation includes the release of cellular contents, necrosis, apoptosis, mobilisation of macrophages, neutrophils and basophils and the production of inflammatory mediators such as nitric oxide (NO), tumour necrosis factoralpha (TNF-), interleukins and interferons [4,5].

Conclusions

In diverse habitats, costus is recognised by numerous names, including A. lappa and S. costus, although current taxonomical data indicate its nomenclature as A. costus. According to ancient systems of medicine such as Ayurveda, the age-old applications of Kushta root are backed by local and traditional claims, which are further validated by scientific investigations done in-vitro and in-vivo by numerous research organisations. Future study will focus on the scientific examination of Kushta's ayurvedic formulation. Based on the findings of scientific investigations, the likely ingredients costunolide, dehydrocostus lactone, alantolactone, cynaropicrin and saussureamine may be used as the lead in future drug development pre-clinical and clinical trials. Despite the fact that there is a large body of research reporting on the action and effects of A. costus.

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Conflict of Interest

There are no conflicts of interest by author.

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