



Xylan biopolymer: Sources, Extraction methods and Applications- A Review

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I. Abstract

Biopolymers are considered one of the most important sources of renewable energy in the modern era, due to their significant importance in industrial processes and sustainable development. These natural materials are inexpensive, widely available sources, and are characterized by their biodegradability, in addition to their multiple benefits and great importance, especially in the food, cosmetic, and pharmaceutical industries. This review included a definition of the biopolymer xylan, which is one of the hemicellulosic biopolymers and the second largest source of polysaccharides. Its chemical structure consists of multiple pentose sugar units linked together with side branches containing glucuronic acid and arabinose. The biopolymer xylan appears linear with some simple side branches. Also, some natural sources of xylan and methods of extraction were explained, as well as some studies of its properties and applications in various fields are highlighted.

Keywords: Xylan, antioxidant, Xylan properties, polysaccharides, Biopolymers

II. Introduction

Polysaccharides are bioactive substances found in abundance in plants and living cell walls and are essential components of insect exoskeletons (Galanakis, 2015).

Given the multiple functional properties of sugars, Multiple only, these sugars have been used in many industries. It is the most abundant raw material because it is extracted from the biomass of living organisms.

Polysaccharides are complex polymers consisting of large numbers of monosaccharides linked together by glycosidic bonds and having branched chains, (Ng *et al.*, 2020).

