

Alginate: Current Uses and Future Perspective

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Abstract

Exopolysaccharides of marine origin have been found to be used extensively in various fields, and their demand is continuously increasing due to their cheap extraction process and several advantageous characteristics. The production of these biopolymers was accounted for only 3–5% during 1980 to 2000. But the emerging markets in several developing and developed countries as well created the need of exploring and using more marine polymers. Alginate is an extensively used marine biopolymer that is derived from the cell wall of brown algae and some bacterial species. Alginates have been found to be exploited in the field of pharmaceuticals and food industries due to their flexible physical, chemical, and physiological properties. They have been used in drugs, protein delivery, tissue regeneration, wound dressing, and wound healing in pharmaceutical industry. In food industry, they have been used as emulsifiers, stabilizers, texturizers, etc. and in paper industry to improve crumpling and resistance of paper. Also, they find their application in textile, cosmetics, and welding industries as thickeners and as a binder of flux, respectively. These advantageous characteristics and the wide use of alginate make them a promising candidate for future applications. In this chapter, the future perspectives of alginate have been discussed in detail.

Keywords: Alginates, drug delivery, emulsifiers, thickeners, cell culture systems

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