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# Biopolymer from medicative Plants its artificial chemical compound and their antineoplastic efficaciousness

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**Abstract**

The caffeic acid-derived biopolymers from medicative plants comfrey and bugloss were isolated that represent a replacement category of natural polyethers. consistent with 13C-, 1H-NMR, APT, second heteronuclear 1H/13C HSQC, 1D NOE and second DOSY experiments the polyoxyethylene chain is that the backbone of the chemical compound molecule. 3,4-Dihydroxyphenyl and carboxyl teams ar regular substituents at 2 carbon atoms within the chain. The continuance unit of this regular chemical compound is 3-(3,4- dihydroxyphenyl)-glyceric acid residue. Thus, the structure of natural chemical compound was found to be poly[oxy-1-carboxy-2-(3,4- dihydroxyphenyl)ethylene] or poly[3-(3,4-dihydroxyphenyl)glyceric acid] (PDPGA). Then basic monomeric moiety of this chemical compound 3-(3,4-dihydroxyphenyl)glyceric acid was synthesized via Sharpless uneven dihydroxylation of trans-caffeic acid derivatives employing a K Os catalyst. Besides, alkyl PDPGA was obtained via ring gap polymerisation of 2-methoxycarbonyl-3-(3,4-dimethoxyphenyl)oxirane employing a cationic instigator. PDPGA is endued with with intriguing medicine activities as immunomodulatary (anticomplementary), inhibitor, antiinflammatory, burn and wound healing and antineoplastic properties. PDPGA and its artificial chemical compound exerted antineoplastic activity in vitro and in vivo against sex hormone-dependent and sex hormone -independent human prostatic adenocarcinoma (PCA) cells via targeting androgen receptor, cell cycle arrest and caspase-mediated cell death with none toxicity, at the side of a powerful decrease in prostate specific matter level in plasma. but antineoplastic efficaciousness of PDPGA against human PCA cells is more practical than its artificial chemical compound. alkyl PDPGA didn't show any activity against PCA. Overall, this study identifies PDPGA as a potent agent against PCA with none toxicity, and supports its clinical application.

**Keywords**

Glycan; Aboriginal Blood Group; Clustered sugar Patches; Aboriginal Antigens; Glycotopes; Food Antigens; Glycobiology; supermolecule Rafts

**INTRODUCTION**

Biopolymers is divided conjointly into 2 broad teams, specifically perishable and non perishable biopolymers. or else, biopolymers is classified on their origin as being either bio-based or fossil fuel-based. The bio-based biopolymers is made from plants, animals, or microorganisms. There ar more non degradable bio-based biopolymers than there arperishable bio-basedbiopolymers [3].

Itpresents the most classes for distinctive between the various styles of biopolymers. this can be not meant to be a comprehensive and wide list. many of the mentioned biopolymers is derived from each bio- based and fuel-based resources, like PLA, PBS, PTT, etc. though PLA is essentially made by fermentation from renewable resources like starch and sugar cane, it is synthesized conjointly from fossil fuels.

Biopolymers ar polymers made from natural sources either with chemicals synthesized from a biological material or entirely biosynthesized by living organisms. the employment of biopolymers from totally different sources has been investigated for several years for pharmaceutical and medical specialty applications. This has resulted during a multitude of care merchandise on the market that use biopolymers within the formulation as a practical excipient or maybe as a lively ingredient.

**Conclusion**

The results of the studies done and given during this review could lead on to new concepts for the advance of antineoplastic drug carriers: they're a powerful impulse for the continuation of analysis during this space.

Many of the chemical compound systems mentioned higher than ar commutation standard drug delivery platforms thanks to their main characteristics, like the shortage of aspect effects and reduced injury to healthy cells. the applying of external or internal stimuli is very suggested for cancer treatments.

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