Carbohydrate Based Biopolymer and Method of Preparation Thereof

TECHNOLOGY:

The invention provides a method for synthesizing carbohydrate-based biopolymer esters by conjugating alginic acid with acyl chlorides in an aqueous pyridine solution. The resulting esters can be used as carriers for site-specific drug delivery and can be salified with mono- or divalent cations. This method applies to any carbohydrate-based biopolymer with alcoholic hydroxyl groups.

Intellectual Property:

Indian Patent: 466183

INVENTOR:

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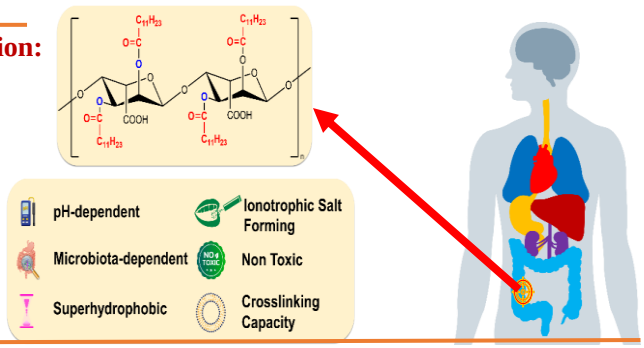
Satyajeet Biswal,
Clara Fernandes

Category of the invention:

- ✓ Biomedicals
- ✓ Cosmetics
- ✓ Pharmaceuticals
- ✓ Drug delivery
- ✓ Excipients



PROBLEM ADDRESSED

The modification of alginates is a complicated process due to the variability in properties such as solubility, pH sensitivity, and structural complexity of the startıng material, alginic acid, which vary with the source. This complexity makes it challenging to achieve the desired modifications consistently.

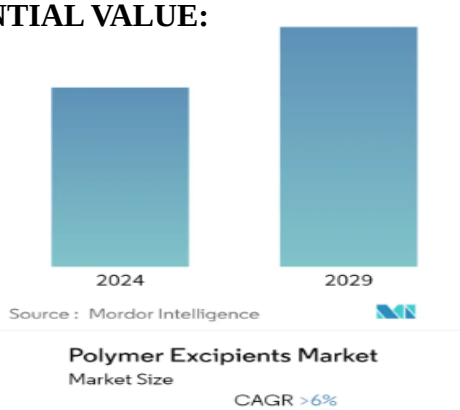
ADVANTAGE

- ✓ **Versatile Applications**: Can be used across numerous fields including cosmetics, pharmaceuticals, and biomedical applications.
- ✓ **Targeted Drug Delivery:** Acts as a novel carrier for bioactive compounds, enabling site-specific drug delivery, particularly useful in targeting tumor tissues.
- ✓ **Multidrug Resistance Treatment**: Effective in delivering drugs selectively to tumor tissues, especially beneficial for treating multidrug-resistant colon cancer.
- ✓ **Controlled Properties**: Chemical modification allows for precise control over properties such as solubility, pH sensitivity, and structural complexity.
- ✓ **High Yield and Simple Process**: The synthesis process is straightforward and yields a high amount of product.
- ✓ **Economic and Accessible:** Utilizes commonly available chemicals, making the process cost-effective.

USP

- ✓ Simple, high-yield process
- ✓ Biodegradable, non-toxic
- ✓ Can be used as Oral or topical formulation
- ✓ Superhydrophobic coating
- ✓ Economic

POTENTIAL VALUE:



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