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Patent Search

Invention Title	A SMART BIO-FUNCTIONAL EXCIPIENT FROM THE PULP OF TRICHOSANTHES CUCUMERINA AND ITS INBUILT PROPERTIES FOR PHARMACEUTICAL APPLICATIONS
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Abstract:

The current invention explores a process for isolating a novel bio-polymer from the pulp of Trichosanthes Cucumerina and its in-built properties for pharmaceutical application. The biopolymer was isolated from the fruit pulp of the Trichosanthes Cucumerina by adding non solvent to the aqueous extract of the fruit pulp and subjected for refrigeration to recover the biopolymer. The physicochemical characters and spectral behaviour was determined by performing the IR, NMR and DSC studies and was devoid of cell line toxicity to human neuroblastoma cell line. The biopolymer showed presence of carboxylic, amino and hydroxyl groups in FTIR spectra. The inbuilt properties of the biopolymer was screened by designing API loaded flexy films and subjected for performance evaluation. The results revealed that biopolymer showed inbuilt filmability and mucoadhesivity to the presence of carboxylic as well as amino group. This novel biopolymer can be used as a bio- functional excipient for designing drug loaded films as well as mucoadhesive films.

Complete Specification

BACKGROUND OF INVENTION:

The current innovation involves the isolation of bio-polymer from the pulp of Trichosanthes Cucumerina and characterization physicochemical and in-built properties. The objective was achieved by suitably formulating aripiprazole as model drug loaded bio-flexy films using biopolymer from Trichosanthes cucumerina vegetable pulp. The biomaterial showed, its property as a film forming agent. The same was proved scientifically by suitably designing dosage using model drug and can be used as pharmaceutical excipient for designing various formulations.

Aripiprazole was significantly delivered to the brain by formulating mucoadhesive bio-flexy films loaded with Aripiprazole. Then dosage was applied on soft palatal mucosa of rats and rabbits. The bio-polymer thus confers valuable filmability that provides increased permeation of drug and improves the therapeutic effects of the formulation.

BRIEF DESCRIPTION OF THE DRAWINGS:

Fig. 1: Flowchart for the isolation of biopolymer from Trichosanthes Cucumerina

Fig. 2: IR Spectra of Trichosanthes Cucumerina biopolymer

Fig. 3: NMR Spectra of Trichosanthes Cucumerina biopolymer

Fig. 4: DSC Spectra of Trichosanthes Cucumerina biopolymer

Fig. 5: SEM and Elemental analysis of Trichosanthes Cucumerina biopolymer

Fig. 6: In-vitro cell line toxicity study of Trichosanthes cucumerina biopolymer

Fig. 7: Mucoadhesivity Study of Trichosanthes Cucumerina biopolymer

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