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## Patent Search

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### Abstract:

The current invention explores an approached for isolating biopolymer from the petals of Tagetes patula. The biopolymer was isolated from petals of Tagetes patula by ad of optimized quantity of non-solvent to the aqueous extract and subjected for refrigeration to recover of biopolymer to subject its characterization, physicochemical characterization of biopolymers such as colour, odour, taste, texture and chemical tests and the study reveals that is isolated biopolymer contain carbohydrates, reducing and starch and presence of RCO-OH, C=C-CO-OH, S=0 and S=0 functional groups confirmed by 1R spectra. The solid-state NMR from ths biopolymer comprises C-CH<sub>2</sub> , C-C C=C, C=O functional groups presence of polymer due to appearance peak at 33.17ppm, 54.02ppm, 71.97ppm, 101.62ppm, 173.40ppm values. The biopolymer showed dev interaction with API (Aripiprazole) due to presence of inactive functional groups. Hence, the polymer was explored for its inbuilt retard ability by suitably designing Aripipr loaded nanoparticles and same was incorporated in Nano-gel FT1(1:0.1), FT2(1:0.2), FT3(1:0.6), FT4(1:0.8), FT5(1:1), FT6(1:1.5), FT7(1:2), FT8(1:4), FT9(1:6), FT10(1:10). The formulation further evaluated for evaluation parameter and formulation FT1 (1:0.1) showed promising texture, significant stability, good spreadibility with the in-vitro drug of over a prolong period 24"hours with T50% of 8.2 hrs and T80% of 19.1 hrs, hence this formulation feasible for trans-cranial delivery.

### Complete Specification

A NOVEL BIOPOLYMER FROM TAGETESPATULA PETALS AND ITS PHARMACEUTICAL APPLICATION

#### BACKGROUND OF INVENTION:

Biopolymer offers extensive advantages in designing targeted novel drug delivery system due to its unique biodegradability, biocompatibility, and retardability and prolongevity in drug release upon incorporation.

In this invention smart attempt was made to explore a novel biopolymer obtained from petals of Tagetespatula belongs to the Family (Asteraceae) as literature reveals th it comprises volatile oil, a yellow crystalline substance quercetagine, phytomelan, thiophenes, steroidal and terpenoidal type constituents and as on date no light was thrown to isolate a novel biopolymer and explore its inbuilt property. This invention explains a methodology for isolation of biopolymer and its unique spectral feature included it's inbuilt for pharmaceutical application.

Aripiprazole is a partial dopamine agonist of the second generation (or atypical) class of antipsychotics that is primarily used in the treatment of schizophrenia, bipolar disorder, major depressive disorder, and irritability associated with autism. The IUPAC name of Aripiprazole is 7-{4-[4-(2, 3-Dichlorophenyl) piperazine-1-yl] butoxy}-3, 4-dihydroquinolin-2(IH)-one.

The Trans-cranial route means the brain targeted transfer of drug molecules across the cranium through the layers of the skin and skin appendages of the head, arteries and veins of the skin of the head, the cranial bones .along with the dipole, the cranial bone sutures, the meninges, and specifically through the emissary veins.

#### BRIEF DESCRIPTION OF THE DRAWINGS

FIG 1 FLOWER OF TAGETES PATULA (RED MARIGOLD)

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