VOLUME 16 | ISSUE 1 | YEAR 2022
eISSN: 2151-6081 . pISSN: 1819-3471

RESEARCH JOURNAL OF
Phytochemistry

rjp.scione.com

Disclaimer:
All these abstracts were presented at the AICTE sponsored e-Conference on Phytopharmaceuticals held on August 6, 2020 by School of Pharmaceutical Education and Research, Jamia Hamdard, New Delhi.

RJP RESEARCH JOURNAL OF Phytochemistry

OPEN ACCESS

Formulation of pH-Sensitive Nanogels of Fluocinolone Acetonide for the Treatment of Psoriasis

Apeksha Gupta[1], Saima Amin[1], Kanchan Kohli[1] and Showkat R. Mir[2]
[1]Department of Pharmaceutics,
[2]Department of Pharmacognosy, School of Pharmaceutical Education and Research, Jamia Hamdard, New Delhi, India

ABSTRACT

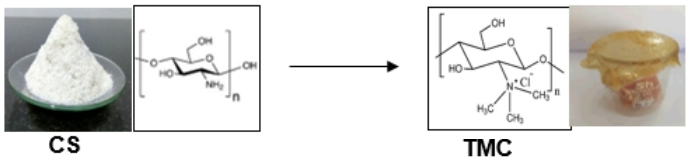
Background and Aim: The word **"**Psoriasis" is derived from the Greek words meaning "an itching condition". It is a chronic inflammatory multi-organ disease known to be the most prevalent autoimmune disease in humans. Currently available therapies for the treatment of psoriasis are either cosmetically unacceptable, require repeated administration or linked with significant adverse toxicity. Due to differences in the pH on the surface of healthy skin (pH 5.0-6.0) and at the psoriatic lesions (pH 4.0-5.0), pH-sensitive nanogels are an intelligent candidate for the treatment of psoriasis. N, N, N- Trimethyl Chitosan (TMC) is a quaternized derivative of chitosan (CS) with superior solubility over pH range 1-9, increased permeation, mucoadhesiveness and pH-stimulus properties. The aim of this study is to develop pH-sensitive nanogels (designated as FA-NG) containing the widely used anti-psoriatic drug Fluocinolone Acetonide (FA) and TMC as the polymeric carrier.

Methods: TMC was first synthesised in the laboratory from the widely available and economical polymer CS by a single step methylation reaction using methyl iodide and N-methyl pyrrolidone (NMP). FA-NGs were prepared by chemical cross-linking method using glutaraldehyde as the cross-linker. TMC solutions with different concentrations were prepared in deionised water and subjected to overnight stirring to ensure complete uniformity of the polymer. To the TMC solution, the drug Fluocinolone Acetonide dissolved in PEG 400 was added drop wise with constant stirring to allow for the proper loading of the drug in the gel and then sonicated for different times. The gels were then cross-linked by the addition different concentrations of 25% w/v aqueous Glutaraldehyde solution and stirred well to form the nanogels.

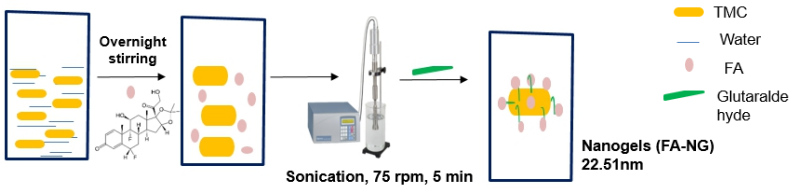
Results: FA-NGs were prepared by chemical cross-linking method using glutaraldehyde as the cross-linker**.**

Conclusions: FA was effectively entrapped in the FA-NG using chemical cross-linking method. TMC is a promising future candidate as a polymer for novel drug delivery systems. FA-NG can prove to be an ideal and novel candidate for treatment of psoriasis.

1. Conversion of CS to TMC



2. Development of FA-NG (Mourya *et al.*, 2009, Oha *et al.*, 2009, Rao *et al.*, 2013).

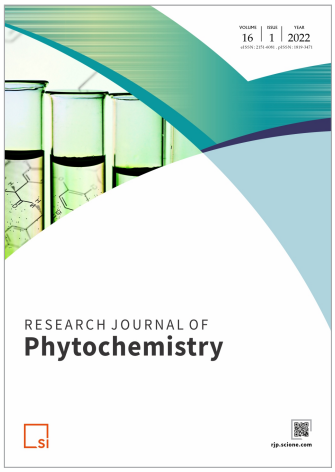


ISSN: 2151-6081 (Online)
ISSN: 1819-3471 (Print)

Research

Journal of Phytochemistry

OA



Aims & Scope

Research Journal of Phytochemistry is a leading international journal publishing peer reviewed scientific literature in four issues annually. Research Journal of Phytochemistry covers research on all aspects of plant chemistry, plant biochemistry, plant molecular biology and chemical ecology.

Author's Benefits

Rigorous Peer-Review
Friendly and constructive peer-review of your paper by specialized referees

High Publication Standards
Rapid production combined with expert copyediting, proofreading, and final presentation

Impact Metrics
Keep track of your research impact with article-level metrics

Authors Retain Copyright
We use the Creative Commons Attribution (CC BY) license that allows the author to retain copyright

Science International is a member of

COPE

PORTICO

Academy of Excellence in Biosciences

Asian Council of Science Editors

Crossref

The Association of Learned & Professional Society Publishers

LiveDNA
a unique ID for your research career

JournalsPedia
SCHOLARLY ANALYTICS

Follow Us

facebook.com/scienceinternational

twitter.com/science_intl

linkedin.com/company/scienceinternational

youtube.com/scienceinternational

scienceinternational.com **rjp.scione.com**

Science International, a digital researcher-led publishing platform of open access journals, operates with a highly cost-efficient model that makes quality publishing affordable for everyone.