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3.3.3 Number of books and chapters in edited volumes/books published and papers published in national / international conference proceedings per teacher during last five years

Summary

Sr. No.	Name of Document	Number of books /chapters	Number of papers in conference	Page no.
1	Academic year 2020-21	02	02	02-06
2	Academic year 2019-20	02	05	08-16
3	Academic year 2018-19	02	02	18-21
4	Academic year 2017-18	00	08	23-30
5	Academic year 2016-17	00	31	32-65

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Academic Year 2020-21

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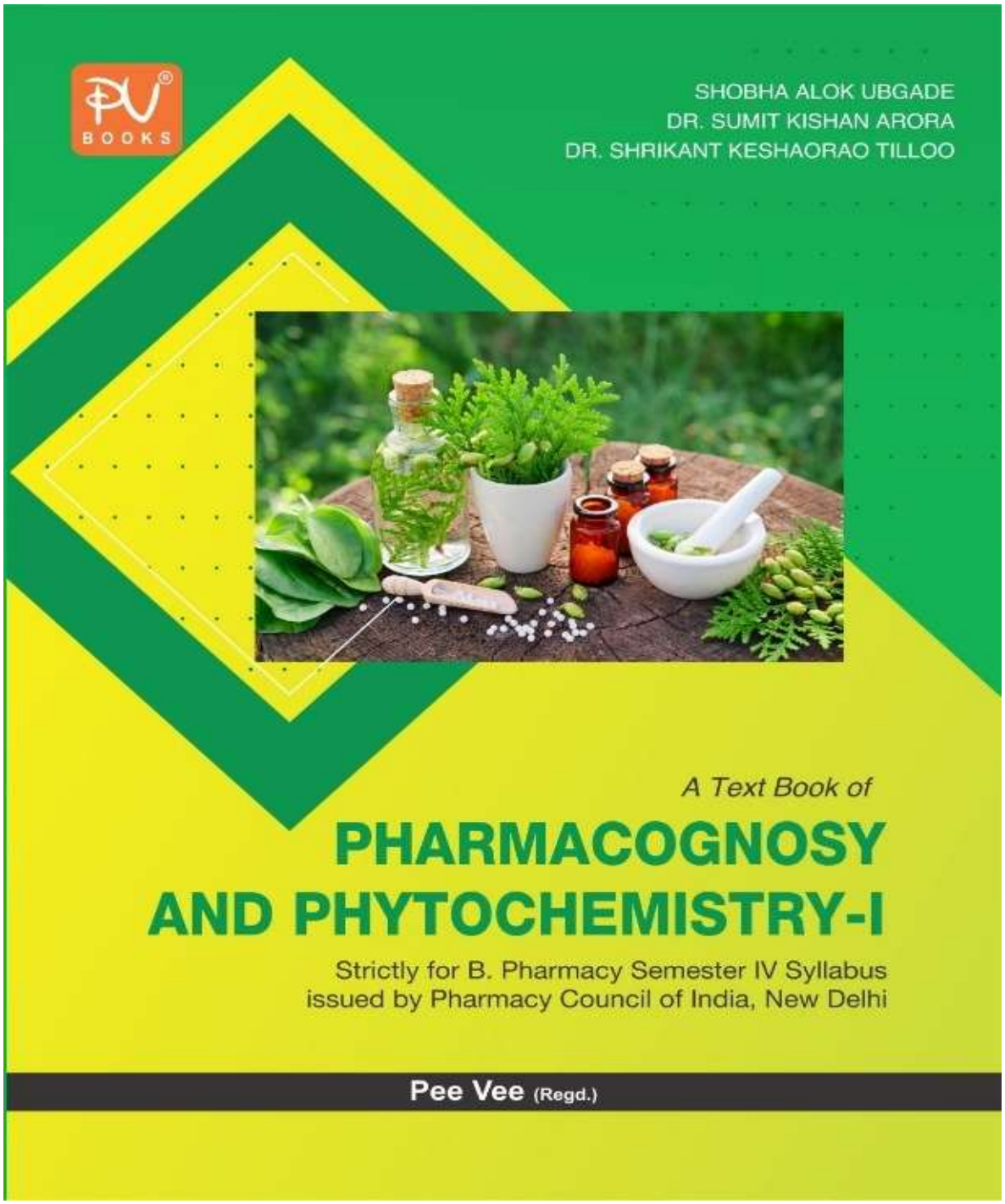
1. **Mrs Shobha Ubgade, Dr. Sumit Arora** and Dr. Shrikant Tilloo Book published entitled "Concise course in Pharmacognosy and Phytochemistry I"with S. Vikas and Company, (P V Books) having ISSN number 97815-43344-32-5 on 1st Jan 2021.



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2. Munindra Ruwali, **Keshav Moharir**, Sanjiv Singh, Punita Aggarwal and Manash K. Paul. Updates in Pharmacogenetics of Non-Small Cell Lung Cancer, in book Pharmacogenetics, edited by Islam A. Khalil, 2021, IntechOpen, DOI: 10.5772/intechopen.97498.

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Updates in Pharmacogenetics of Non-Small Cell Lung Cancer

By Munindra Ruwali, Keshav Moharir, Sanjiv Singh, Punita Aggarwal and Manash K. Paul

Submitted: February 27th 2021 Reviewed: March 30th 2021 Published: April 26th 2021

DOI: 10.5772/intechopen.97498

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Abstract

Though significant clinical advances have been made, lung cancer remains the most lethal, with a low 5-year survival rate. The variability in patient response towards therapy is substantial and is associated with lung cancer's genomic landscape. Pharmacogenetic studies have deciphered many clinically relevant associations between tumor genetic alterations and their influences on drug efficacy, toxicity sensitivity and overall outcomes of cancer treatment. Biomarkers are tools in the arsenal that can help in the prediction, prognosis, diagnosis and follow-up of cancer treatment. Bulk and single-cell next-generation sequencing of large patient cohorts have generated a better understanding of the genetic underpinnings of lung cancer, and opening up personalized therapeutic opportunities. Immunotherapy and personalized medicine are providing hope for lung cancer patients. This review highlights the genetic alterations and important lung cancer biomarkers. The pharmacogenetic associations, personalized immunotherapy and challenges associated with effective therapy are also discussed. Pharmacogenetics and pharmacogenomics can open up new vistas for optimized, personalized NSCLC treatment.

Keywords

Lung cancer NSCLC Pharmacogenetics Biomarkers Personalized medicine Tyrosine kinase inhibitors Immunotherapy Checkpoint inhibitor Challenges

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3. **V. B. Pande** presented Poster on the topic entitled Antidiabetic polyherbal ingredient *Azadirachta indica*: A Short Review at Liyang 2020, International Conference on Unlocking challenges, Innovations and Global opportunities in Research Amidst COVID-19 Pandemics Organised by Shri Rawatpura Sarkar University Raipur Chhatisgarh, India.

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2nd International Conference

On

Unlocking Challenges, Innovations and Global Opportunities in Research Amidst COVID-19 Pandemic

(14th – 16th December, 2020)

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Raipur, Chhattisgarh, India

In Collaboration with
Tagum Doctors College Inc.,Tagum City, Philippines

In Association with
Indian Pharmaceutical Association (IPA)
Association of Pharmaceutical Teachers of India (APTI)

Certificate of Participation

This is to certify that Dr./Mr./Ms. Mr. Vipinchandra Pande
of Department of pharmacy, Mandsaur University, mandsaur
has participated / delivered an oral presentation / poster presentation on the topic entitled
Antidiabetic polyherbal ingredient Azadirachta indica: A Short Review

December, 2020 at Shri Rawatpura Sarkar University, Raipur, Chhattisgarh, India.

Prof. (Dr.) R. K. Pathak	Prof. (Dr.) Manuel Dennis E. Molina	Prof. (Dr.) Jesa S. Madelo	Dr. Manmohan Singh Jangdey
Vice Chancellor, SRU, Raipur	President, TDCI, Philippines	Research Director, TDCI, Philippines	Principal, Department of Pharmacy, SRU, Raipur
Patron	Patron	Convener	Convener

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4. **V. B. Pande** Presented E-poster on the topic entitled STZ- As Induction Model for Diabetes Mellitus in E-International conference on DNA nanostructure based Vectors for Drug Delivery: Opportunities and Challenges, on 19th September 2020 sponsored by AICTE, new Delhi, Organised by Adina Institute of Pharmaceutical Sciences, Sagar (M.P.).

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1. **Nidhi P. Sapkal** and Anwar S. Daud. Advancements in delivery of herbal drugs for cognitive disorders" in Nutraceuticals in brain health and beyond Edited by: Dilip Ghosh, Academic Press, Elsevier, 2020.

ACADEMIC PRESS
Nutraceuticals in Brain Health and Beyond
2021, Pages 343-355

Chapter 24 - Advancements in delivery of herbal drugs for cognitive disorders

Nidhi Prakash Sapkal [1, 2], Anwar Siraj Daud [2]

[1] Department of Pharmaceutical Chemistry, Gurunanak College of Pharmacy, Nagpur, Maharashtra, India
[2] Zim Laboratories Limited, Nagpur, Maharashtra, India

Available online 13 November 2020, Version of Record 13 November 2020.

https://doi.org/10.1016/B978-0-12-820593-8.00024-0

Abstract

The incidence of neurological disorders, especially Alzheimer disease (AD), is directly linked to increased age. There are several herbal drugs that have promising ability to treat AD and other neurological disorders but lack clinical efficacy due to nondelivery at the site of action, i.e., brain. The use of novel technologies of drug delivery allows these drugs to become available in the central nervous system (CNS) in therapeutic concentrations. Some of the drug delivery techniques, such as addition of solubilizers, permeation enhancers, metabolism suppressors, etc., are fairly simple from a manufacturing and regulatory standpoint. Hence, they can be easily adopted at the industrial scale. Some techniques though complex are quite promising. However, there are few clinical studies evaluating these approaches. Therefore, there is a need for more clinical data in order to gain confidence in the ability of these techniques to enhance CNS delivery of herbal drugs.

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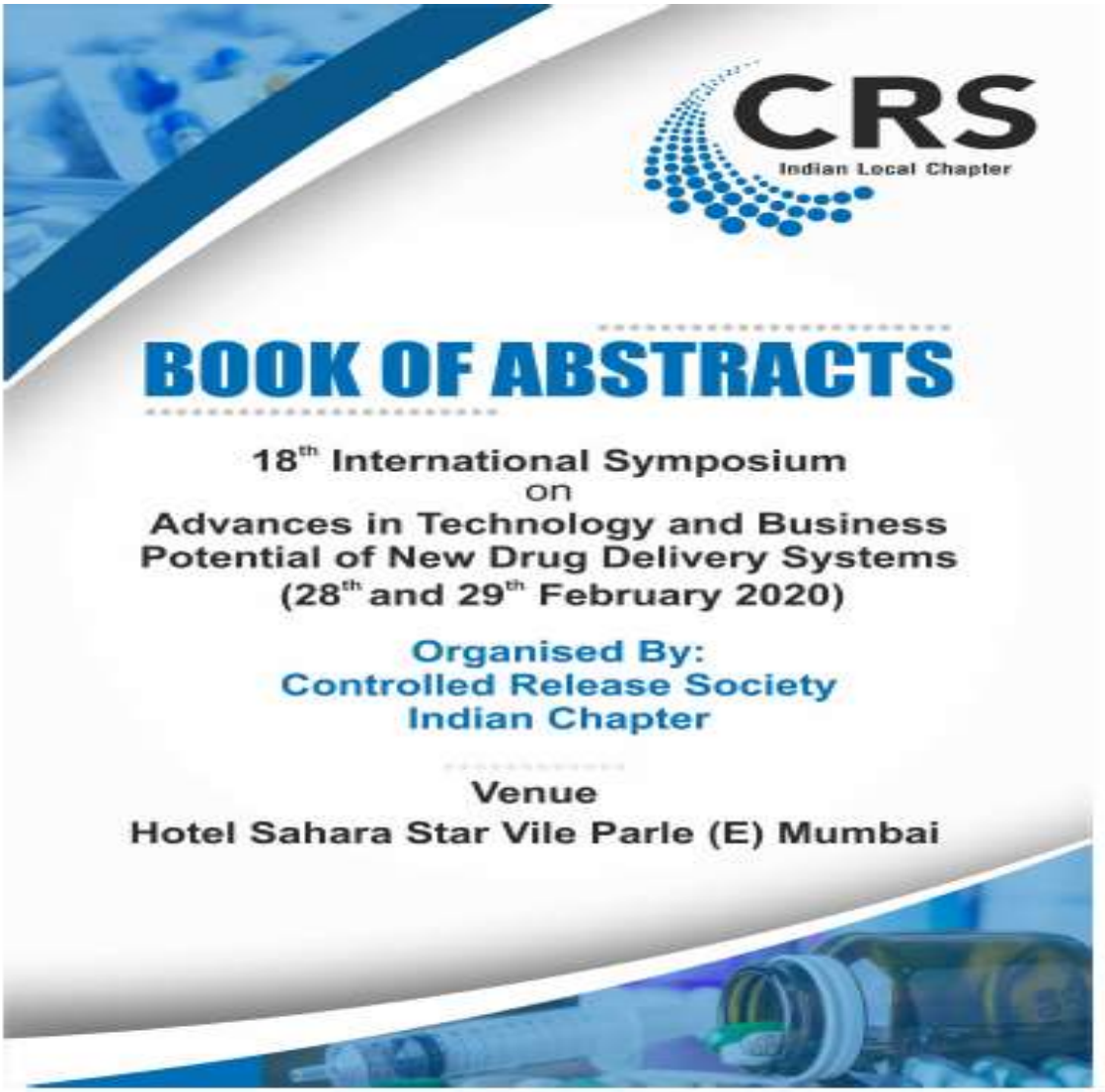
2. **K. S. Moharir, K. Khune, V. V. Kale** presented paper on Development and Evaluation of Nanoengineered Cellulose for advanced drug delivery applications in 18th International Symposium on Advances in Technology and Business Potential of new drug delivery system Organized by Controlled Release Society conference at Mumbai, on 29th February 2020.



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P-101

DEVELOPMENT AND EVALUATION OF NANOENGINEERED CELLULOSE FOR ADVANCED DRUG DELIVERYAPPLICATIONS

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Email: keshavmoharir@gmail.com

Keywords: Crystalline nanocellulose, drug delivery, characterization

Aims: To develop and characterize cellulose nanocrystals/nanofibrils from natural source.

Objectives: There is steady, continuous demand for replacement of synthetic excipients with nature based materials. Cellulose is such most abundant material with acceptable barrier, surface and mechanical properties. The objective of the current study was to prepare cellulose nanocrystals (CNC) from aquatic weed available naturally and abundantly. The prepared CNC were characterized for their surfaceproperties, stability, morphology, crystallinity,aspect ratio, particle sizeetc. with respect to influence of extraction and manufacturing process.

Methodology: The CNC was extracted from stems of aquatic weeds by chemical treatment as mentioned below

Scheme for extraction of CNC

All the steps carried out were examined for parameters like temperature, acid concentration, curing time, rpm etc. at various levels. The characterization was carried out for aspect ratio and surface morphology (SEM), thermal studies (TGA),Particle size analysis,crystallinity studies (PXRD), FTIR to confirm removal of lignin and stability of functional groups.

Results and Discussion: The crystalline nanocellulose prepared extraction process show yield in between 43% to 62% by weight. The thermal stability of CNC is improved than crude fibres as evident by TGA curves. This behaviour is in conformation with FTIR studies indicating absence of lignin and hemicellulose in acid treated cellulose. XRD shows typical crystalline pattern as that of crude cellulose, with different polymorphic forms formation subject to changes in extraction process variables. Surface morphology of freeze dried samples by SEM and particle size analysis depicted average particle size in the range of 130 to 157.8 nm and average polydispersity index of 0.266.

Conclusion: The initial physico-chemical characterization of CNC shows basic potential characteristics suitable for its use as an excipient in formulation. Further studies on CNC incorporation into individual formulations are necessary. The process scale can be achieved along with necessary improvement in practical yield.

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1. Atmakuru Ramesh, ThirupuraSundariMarimuthu, Isolation and characterization of cellulose nanofibres from aquatic weed water hyacinth – *Echorniacrassipes*; Carbohydrate Polymers, Vol.87, Issue 2, 15 Jan. 2012, pp 1701-1705.
2. Jacobs H. Jordan, Michael W. Easson, Bruce Dien, Stephanie Thompson, Brian D. Extraction and characterization of nanocellulose crystals from cotton gin motes and cotton gin waste; Cellulose, Issue 10/2019, 03/06/2019, pp 5959-5979.
3. Dufresne A (2017) Cellulose nanomaterial reinforced polymer nanocomposites. CurrOpin Colloid Interface Sci 29:1–8.

Acknowledgement: The researchers are very much thankful for kind support by Principal, Dr. A. M. Ittadwar and Management of Gurunanak College of Pharmacy, Nagpur.

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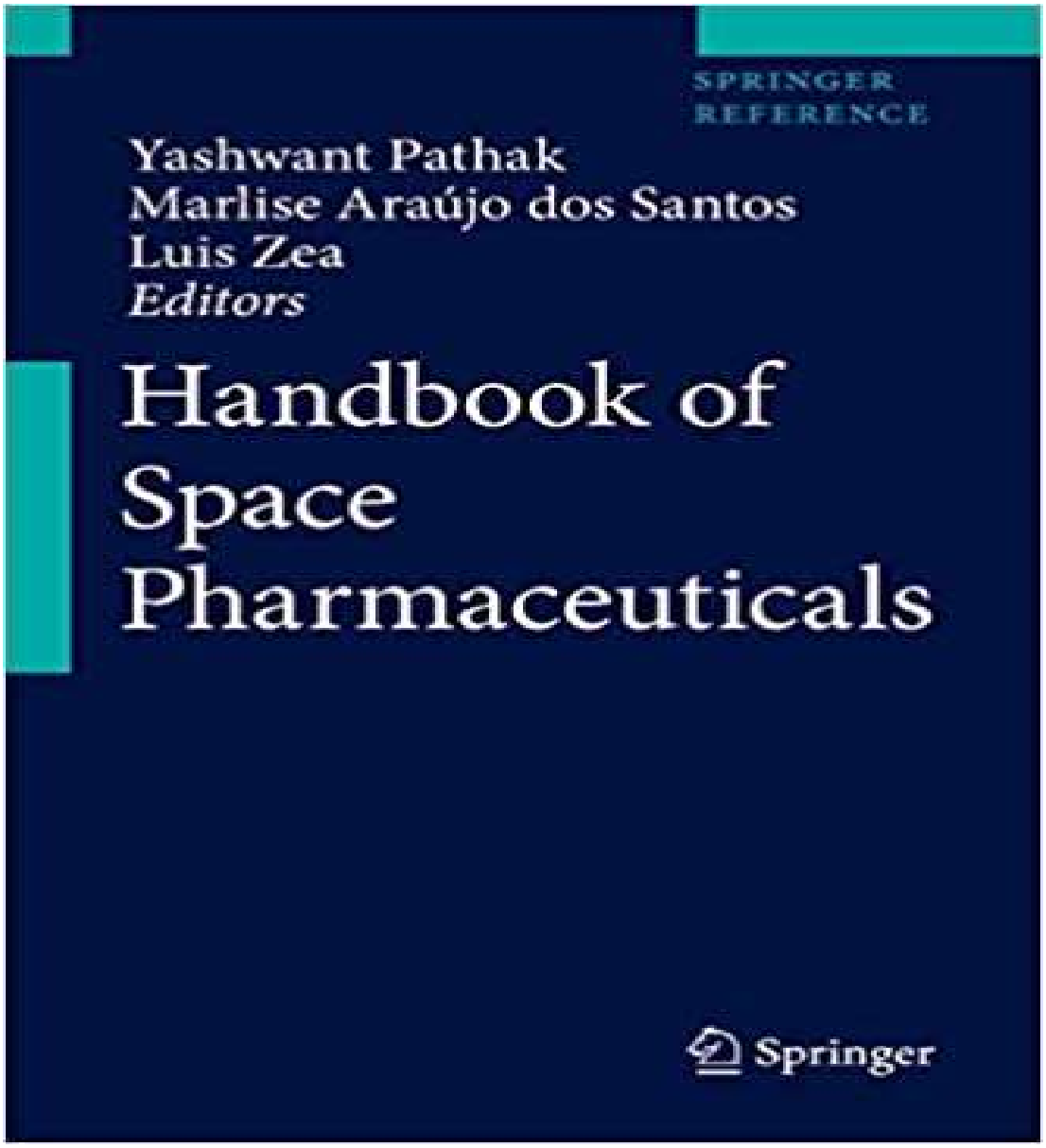
3. **Keshav Moharir, Vinita V. Kale, Abhay M. Ittadwar**, Y. V. Pathak. Book chapter "Introduction to Pharmaceuticals" in the book titled 'Handbook of Space Pharmaceuticals' 2019



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4. **T.M. Rasala, Rohini Rakshak and V.V. Kale** presented a paper entitled 'Development and Evaluation of oral diskettes for dental disorders for paediatric population' in National Conference on QbD & PAT an essential tool of product life cycle management held at SVKM'S Dr. Bhanuben Nanavati College of Pharmacy, Mumbai on 28-29 August 2019.


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Vile Parle (W), Mumbai– 400056

Certificate of Participation

TIRUPATI RASALA

For Participation/ Poster Presentation Stood 3rd Rank

At AICTE sponsored National Conference on

"QbD & PAT- An Essential Tool of Product Life Cycle Management" organized by

SVKM's Dr. Bhanuben Nanavati College of Pharmacy, Mumbai, August 28-29, 2019.

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5. Shubham Gupta, Priya Vaswani, Priyanka Bhaisare, **Vaishali Kilor** presented a poster on 'Development of discriminating dissolution method of sildenafil citrate tablet in Disso India-Chandigadh 2019 a Conference on Dissolution Science and Applications with theme 'Ensuring Built-in Quality through Dissolution Studies', organized jointly by Society for pharmaceutical dissolution sciences (SPDS) and National Institute of pharmaceutical education and Research, Mohali, at Radisson Hotel, Chandigarh Zirakpur, Chandigadh, on 12th-13th Sep, 2019.

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Poster Abstracts

P8 - Development of Discriminating Dissolution Method for Sildenafil Citrate Tablets.

Shubham S. Gupta, Priya V. Vaswani, Priyanka T. Bhaisare, Vaishali A. Kilor
Gurunanak College of Pharmacy, Dixit Nagar, Nari Road, Nagpur-440026, Maharashtra, India.
Email ID: shubhamgupta0918@gmail.com

Key words:

Discriminating dissolution, sildenafil citrate tablets, BCS class II, similarity factor

Introduction:

Discriminatory dissolution method is used to describe that a dissolution test is capable of differentiating or discriminating between products based on formulation and/or manufacturing differences. However these differences may reflect products *in-vivo* differences, thus their quality in humans.The discriminating power of the dissolution method is the method's ability to detect changes in the drug product. The systematic development of discriminatory dissolution method is required for starting full-fledged product development. Demonstrating the discriminatory power of the dissolution method is used in monitoring API or formulation parameters of the poorly soluble compound.Sildenafil citrate has a pH dependent solubility thus it is categorized as BCS class II drug. As BCS class II drug possess poor solubility it eventually affects drug absorption. Therefore it is important to develop suitable dissolution method as a quality control parameter for such drugs, which correlates with the rate of absorption of the drug *in-vivo*. Also developing discriminating dissolution method helps in generic drug development as per US-FDA guidelines.

Aim:

Aim of proposed work is to develop a discriminating dissolution method for Sildenafil Citrate tablet formulations.

Methods:

To quantify the Sildenafil in dissolution samples, UV spectrophotometric method was developed using 0.01M hydrochloric acid as solvent at λmax 294 nm. Saturation solubility, pH dependent solubilityof Sildenafil citrate bulk drug was evaluated. Sildenafil citrate tablets were developed by using wet granulation method. Sildenafil tablets IP (100mg) from Cipla was used as reference. All the specifications of the formulated Sildenafil citrate tablets were comparable to the marketed tablet as per IP including dissolution profile. For developing discriminating dissolution method, dissolution profile of formulated tablets was compared with marketed tablets of sildenafil citrate (100mg) by varying pH of the dissolution medium, rpm as well as volume of the dissolution medium. Effect of run to run variability as well as change in type of dissolution apparatus was also studied.

Results & Conclusion:

Dissolution method was optimized using USP type I (paddle) apparatus at 50 rpm rotation speed and 900 ml phosphate buffer (pH 6.8) at 37±0.5°C as discriminating dissolution medium. The similarity factor (f_2) was calculated for formulations with changes in composition and manufacturing variations, values revealed that dissolution method having discriminating power. The proposed dissolution method can be effectively applied for routine quality control *in- vitro* dissolution studies of Sildenafil citrate in tablets.

Acknowledgement:

Authors are thankful to the management and Principal, GurunanakCollege of pharmacyDr. A. M. Ittadwar (Sikh Education Society) for providing necessary research facility. We acknowledge the cooperation fromZim Laboratories Ltd., Kalmeshwar in providing the gift sample of Sildenafil citrate for the present research work.

References:

1) Qureshi SA. Developing discriminatory drug dissolution tests and profiles: Some thoughts for consideration on the concept and its interpretation. Dissolution Technol. 2006 Nov;13(4):18-23.

2) McAllister M. Dynamic dissolution: a step closer to predictive dissolution testing? Molecular pharmaceutics. 2010 Aug 10;7(5):1374-87.

3) https://www.fda.gov/regulatory-information/search-fda-guidance-documents/dissolutiontesting-immediate-release-solid-oral-dosage-forms

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6. **Nidhi P. Sapkal** participate and presented on Orally Disintegrating Strip (OSD): Revolutionizing oral drug administration therapies by new drug delivery system In 67th International Scientific and Practical Conference at Avicenna Tajik State Medical University on 29 November, 2019

Душанбе, Таджикистан
29 ноября 2019 г.

CERTIFICATE

Dushanbe, Tajikistan
November, 29 2019

УДОСТОВЕРЯЕТ, ЧТО
CERTIFIES THAT

Nidhi Sapkal

Принимал (а) участие в работе международной научно-практической конференции (67-ой годичной), "МЕДИЦИНСКАЯ НАУКА XXI ВЕКА – ВЗГЛЯД В БУДУЩЕЕ", посвященной 80-летию ГОУ "ТГМУ имени Абуали ибни Сино" в объёме 16 академических часов.

Participated in the international scientific and practical conference (67th annual), "MEDICAL SCIENCE OF THE XXI CENTURY - LOOKING TO THE FUTURE", dedicated to the 80th anniversary of SEI "Avicenna Tajik State Medical University" (16 academic hours)

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7. **Nidhi P. Sapkal** participate and presented on Oral thin films: innovative dosage form for improving patient compliance In Pharma Insight Briefings, CPHI worldwide at Frankfurt, Germany on 24th October, 2017.

Five minutes with

Principal research coordinator
Zim Laboratories

The market is always driven by the needs of the end user, the patient. Research and development focused on dosage frequency, ease of handling and storage, and increased safety of existing medicinal products are the types of market trends that will add value down the line to the patient. All pharmaceutical companies are trying to offer solutions to unmet medical needs through innovative proprietary technologies in these areas.

Zim is creating differentiated generic pharmaceutical products from its indigenously developed proprietary technology platforms. These products offer a unique market position for delivering enhanced product attributes to patients and clients. All this attention paid to noninfringing processes ensures faster time to market and a first-mover advantage.

Over the last two decades, the global pharmaceutical market has been facing declining R&D productivity, increasing generic formation, and fewer new chemical entities. During this period, pharmaceutical companies globally have moved toward developing novel drug delivery systems to extend the life cycle of patented drugs (life-cycle management) and to build a competitive advantage in the crowded generics market.

At Zim, we believe in developing innovative products that add value to all the members of the pharmaceutical community, from patient to clinician. Our technology platforms are indigenous, and many are patent protected. The dedicated efforts of our highly skilled research professionals are making our technology platforms more robust and efficient.

We are presenting new pharmaceutical dosage forms. These are elegant, flexible, thin films that dissolve almost instantly on the tongue. These films provide strong product differentiation, visual recognition, and additional attributes useful for patients and caregivers. They are ideal for delivery to pediatric, geriatric, dysphagic, and other special-needs patient populations. Most of the companies are interested in brand extension of their existing products, and many others are interested in offering this novel dosage form to their patients.

Attendees will learn about the features of this novel dosage form and about formulation, technology, and regulatory challenges associated with the development of new products in the thin-film technology platform. Those who are interested in brand extension and want to know more about this versatile technology platform that is suitable for multiple therapeutic segments and varying release profiles shouldn't miss this session. In addition, anyone who wants to understand the complexities associated with development and approval of new products in this dosage form should attend this presentation. Finally, attendees will learn about the recent scientific developments we are implementing to make this present technology free of limitations.

The main disadvantage of conventional oral solid dosage forms like tablets and capsules is that they need to be swallowed, preferably with water or another liquid. As our population continues to age, the need for nonobstructive dosage forms will continue to grow. Thin films have evolved to fill this need. The demand of pharmaceutical thin films is rising every year. The thin-film segment has seen a significant increase in profit since 2015 and is expected to rise 18% by 2020.

Sapkal will present a Pharma Insight Briefing, "Oral Thin Films: Innovative Dosage Form for Improving Patient Compliance," on Oct. 24 at 14:30 in G1A3.

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1. **Dr. Sumit Arora** and Dr. Prakash Itankar. **Pharmacognosy of Medicinal Plants**, SBW Publishers, New Delhi, 2019, ISBN – 978-81-85708-93-5.

ABOUT THE BOOK

It gives us an immense pleasure in bringing out the first edition of our book "Pharmacognosy of Medicinal Plants". The book will be good for reference to all pharmacy students, as it is designed through inclusion of feedback and opinion from the students of Pharmacy, especially those who are preparing for various competitive exams such as GPAT, NIPER, etc. This book is also helpful for teachers of Pharmacy Graduate and Diploma institutes.

Our book comprises pharmacognostic account of 54 medicinally important crude drugs containing alkaloids, glycosides, tannins, terpenoids, resins, etc. Special feature of this book which gives it an edge over other available books is special emphasis on cultivation method presented in the form of flowchart, diagrammatic representation, labeling all microscopical features in an image form, uses of crude drugs along with their mechanism of action shown in the flowchart and different characters for the identification of adulteration.

ABOUT THE AUTHOR

Dr. Prakash Rambhauji Itankar, Ph.D., M. Pharm. (Pharmacognosy), D.N.Y.S. (Diploma in Naturopathy and Yogic Science), presently serving as Assistant Professor (Sl. Gr.) at Department of Pharmaceutical Sciences, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur. He is a recipient of Prestigious "Ethnopharmacology Outstanding Service award 2015" of Society for Ethnopharmacology India (Affiliated to International Society for Ethnopharmacology, UK). He has 06 yrs of Industrial and 18 years of academic experience. He has 52 National and International Publications, filed 04 patents and guided 05 students for Ph. D. He has guided 72 M. Pharm. Students and has Co-Guided M. D. Ayurveda students. He is working for socializing the traditional claims through ethnopharmacology and scientific validation of drugs from natural origin or their formulations. He is also engaged in research for exploring new drug molecules, novel combinations, novel dosage forms, seeking patents, imbibing entrepreneurship, supporting and bridging the gap of scientific ambiguity amongst the traditional practitioners and end users.

Dr. Sumit Kishan Arora, Ph.D., M. Pharm. (Pharmacognosy), is presently working as Assistant Professor at Gurunanak College of Pharmacy, Nari, Nagpur. He has total 08 years of teaching experience in diploma as well as degree. He was gold medalist of RTM Nagpur University, Nagpur in B. Pharm and M. Pharm. He completed his Ph.D. under the CSIR scheme from Department of Pharmaceutical Sciences, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur. He has published 10 papers in national and international journals. His main area of research includes standardization and isolation of phytoconstituents. He is also associated with various curricular and co-curricular activities in the field.

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Dr. Sumit Arora

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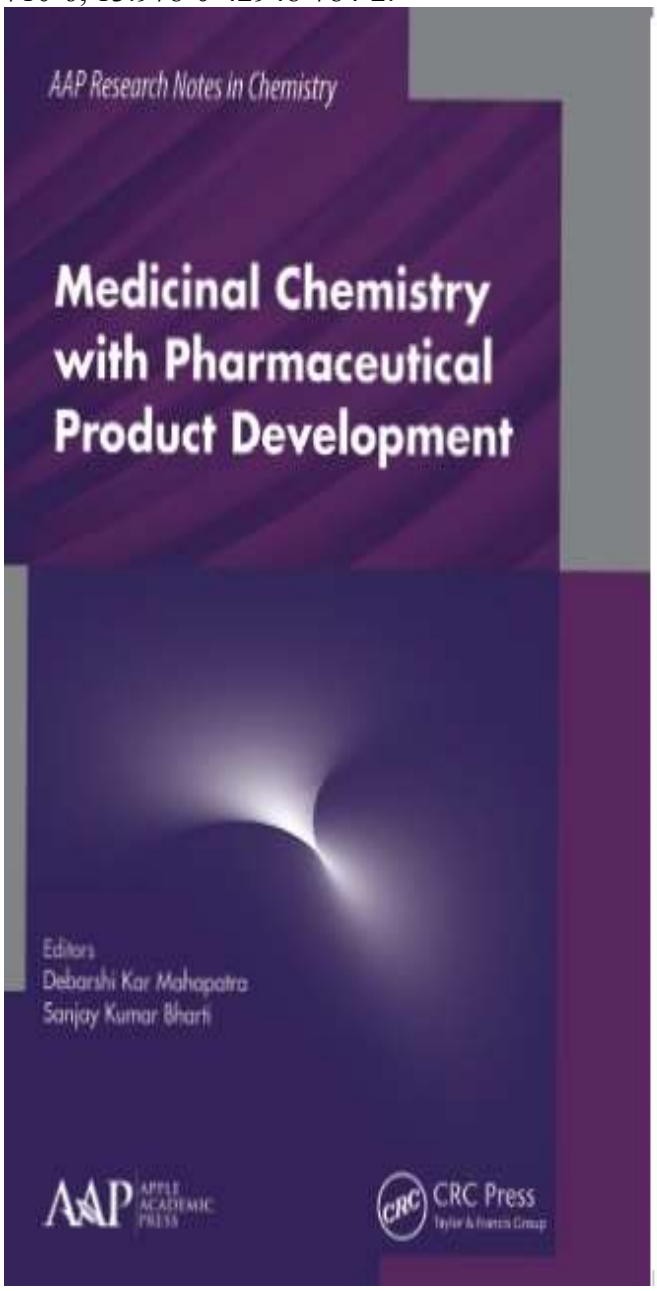
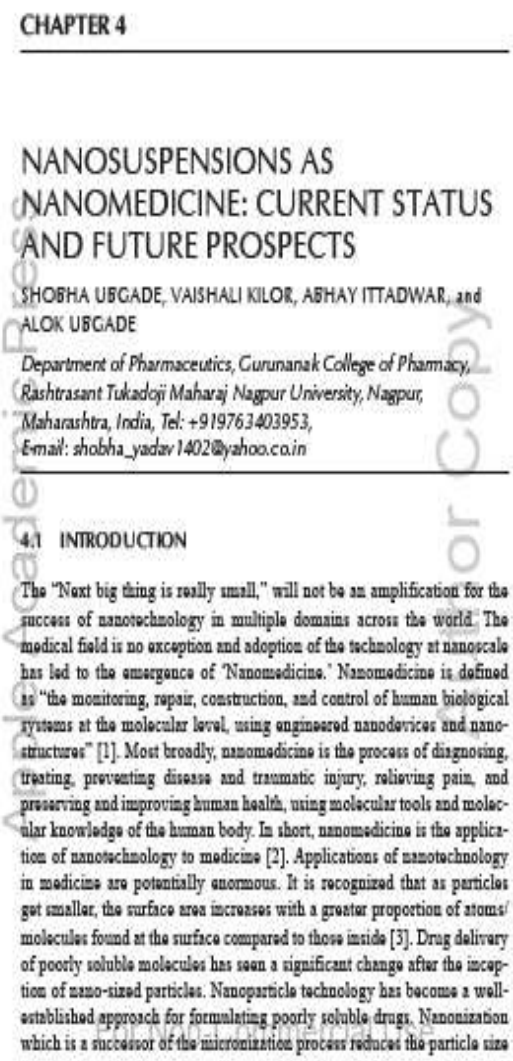
2. Shobha Ubgade, Vaishali Kilor, Alok Ubgade, **Abhay Ittadwar** Chapter authored on the topic "Nanosuspensions as nanomedicine: Current status and Future Prospect" has been published in the book entitled *"Medicinal Chemistry with Pharmaceutical Product Development"* edited by Debarshi Kar Mahapatra and Sanjay Kumar Bharti; published by Apple Academic Press, Toronto 2019; Chapter 4, page no.105-154. ISBN-13:978-1-77188-710-6; 13:978-0-42948-784-2.





CHAPTER 4

NANOSUSPENSIONS AS NANOMEDICINE: CURRENT STATUS AND FUTURE PROSPECTS

SHOBHA UBGADE, VAISHALI KILOR, ABHAY ITTADWAR, and ALOK UBGADE

Department of Pharmaceutics, Gurunanak College of Pharmacy, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur, Maharashtra, India, Tel: +919763403953, E-mail: shobha_yadav1402@yahoo.co.in

4.1 INTRODUCTION

The "Next big thing is really small," will not be an amplification for the success of nanotechnology in multiple domains across the world. The medical field is no exception and adoption of the technology at nanoscale has led to the emergence of 'Nanomedicine.' Nanomedicine is defined as "the monitoring, repair, construction, and control of human biological systems at the molecular level, using engineered nanodevices and nanostructures" [1]. Most broadly, nanomedicine is the process of diagnosing, treating, preventing disease and traumatic injury, relieving pain, and preserving and improving human health, using molecular tools and molecular knowledge of the human body. In short, nanomedicine is the application of nanotechnology to medicine [2]. Applications of nanotechnology in medicine are potentially enormous. It is recognized that as particles get smaller, the surface area increases with a greater proportion of atoms/molecules found at the surface compared to those inside [3]. Drug delivery of poorly soluble molecules has seen a significant change after the inception of nano-sized particles. Nanoparticle technology has become a well-established approach for formulating poorly soluble drugs. Nanonization which is a successor of the micronization process reduced the particle size

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Principal
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3. Priya Dule, **Vaishali Kilor, Nidhi Sapkal,** Minal Bonde, Anwar Daud; Development of PEO drug loaded filaments using Hot Melt Extruder for 3D printing of pharmaceuticals presented poster at Young Scientist Conference held during India International Science Festival held at Lucknow during 5th to 8th Oct, 2018.

INDIA INTERNATIONAL SCIENCE FESTIVAL 2018

INDIA INTERNATIONAL SCIENCE FESTIVAL
भारत अंतर्राष्ट्रीय विज्ञान महोत्सव 2018

5th - 8th OCTOBER 2018
Indira Gandhi Pratishthan

Certificate of Participation

This is to certify that Mr/Ms/Mrs/Dr *Priya Dule*

has participated in the **Young Scientists' Conference** and presented his/her work in **the theme** *Swasth Bharat*

during India International Science Festival held at Lucknow.

Dr. Renu Swarup
Secretary, Department of Biotechnology, GoI

Dr. Vijay Bhatkar
President, Vijnana Bharati

Program Coordinator
Department of Biotechnology

Ministry of Science & Technology Government of India | Vijnana Bharati | Ministry of Earth Sciences Government of India

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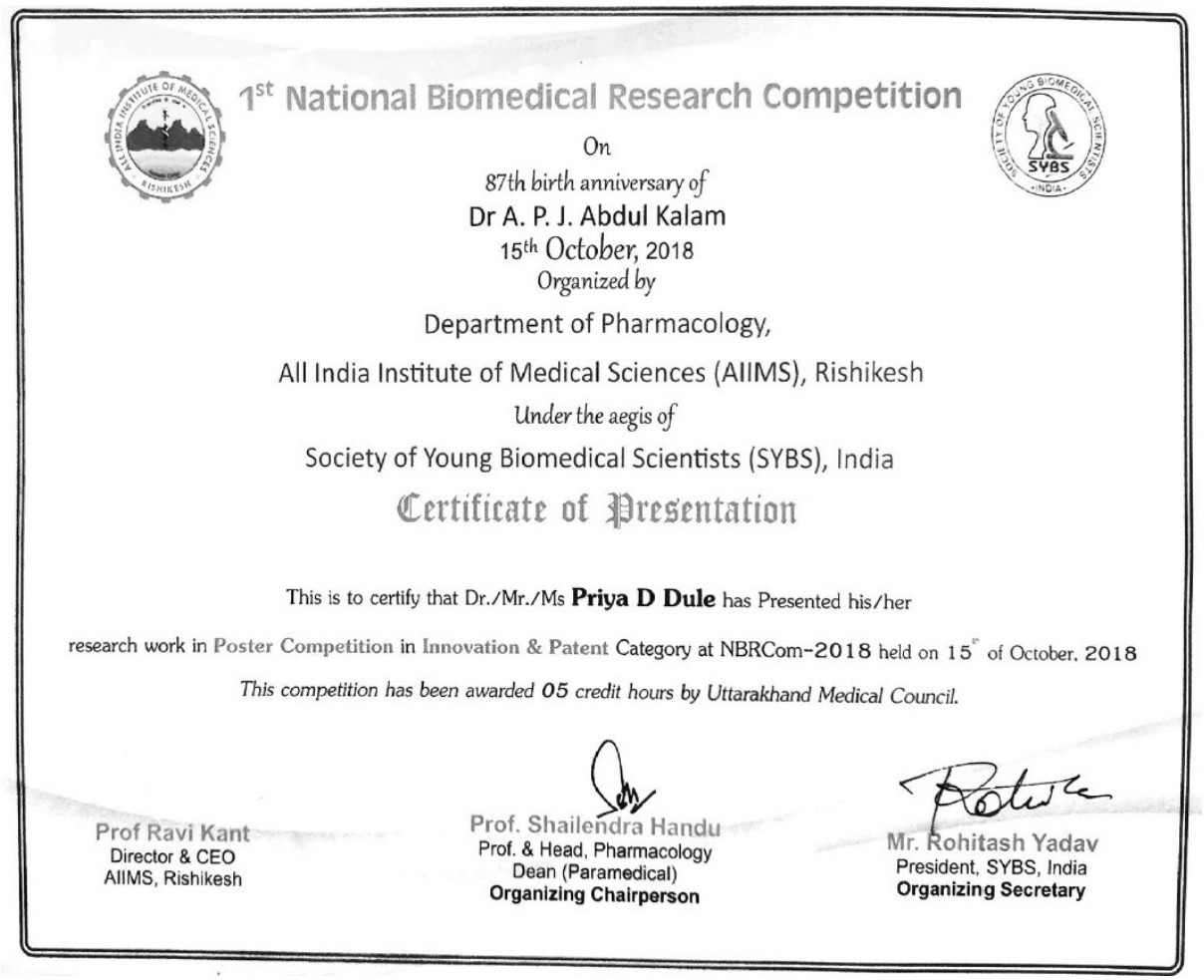
4. Priya Dule, **Vaishali Kilor**, **Nidhi Sapkal**, Minal Bonde, Anwar Daud. Preparation and evaluation of drug loaded polymer filaments for 3D printing of tablets. Presented poster at NBRcom -2018, held at AIIMS, Rishikesh on 15th Oct, 2018.



1st National Biomedical Research Competition

On
87th birth anniversary of
Dr A. P. J. Abdul Kalam
15th October, 2018
Organized by
Department of Pharmacology,
All India Institute of Medical Sciences (AIIMS), Rishikesh
Under the aegis of
Society of Young Biomedical Scientists (SYBS), India

Certificate of Presentation

This is to certify that Dr./Mr./Ms **Priya D Dule** has Presented his/her research work in Poster Competition in Innovation & Patent Category at NBRCom-2018 held on 15th of October, 2018

This competition has been awarded 05 credit hours by Uttarakhand Medical Council.

Prof Ravi Kant
Director & CEO
AIIMS, Rishikesh

Prof. Shailendra Handu
Prof. & Head, Pharmacology
Dean (Paramedical)
Organizing Chairperson

Mr. Rohitash Yadav
President, SYBS, India
Organizing Secretary

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Academic Year 2017-18

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1. **V. A. Kilor**, Priya Dule, **Nidhi Sapkal** and Anwar Daud presented paper on Drug printed Oral Thin Films: Future trend in drug delivery Technology at "2nd International Conference and Exhibition on Pharmaceutical Development and Technology" held during May 11-12, 2018 in Osaka, Japan.

Vaishali Kilor et al., J Dev Drugs 2018, Volume 7
DOI: 10.4172/2329-6631-C1-026

conferenceseries.com

2nd International Conference and Exhibition on

PHARMACEUTICAL DEVELOPMENT AND TECHNOLOGY

May 11-12, 2018 Osaka, Japan

Drug printed oral thin films: Future trend in drug delivery technology

Vaishali Kilor[1,2], Priya Dule[1], Nidhi Sapkal[2] and Anwar Daud[2]
[1]Guru Nanak College of Pharmacy, India
[2]Zim Labs Ltd, India

Thin films are relatively a recent addition in the pharmaceutical dosage forms. These can be used to administer drugs via various routes like oral, buccal, sublingual, transdermal, vaginal, rectal etc. When given by oral route these are meant for rapid disintegration and release of the drug in the oral cavity for quick therapeutic effect without use of water for swallowing. These are gaining popularity amongst the patient population of all ages, specially pediatric and geriatric patients. Though overcoming drawbacks of many oral solid dosage forms thin film technology faces certain limitations for drugs prone to hydrolytic and thermal degradation. Many drugs when loaded onto thin films using the conventional casting method results in films with poor mechanical properties. Manufacturing thin films by printing actives onto placebo substrates can overcome these limitations increasing the production yield and quality. The technology has the ability to process actives which are otherwise restricted to be formulated as thin film formulations. In the present investigation drop on demand printing technology was used for the printing of OTF of model drug cholecalciferol which is prone to degradation in solvent casted films. Drug loaded printing ink was developed with optimized properties and printing was carried out on the placebo substrate. Stability studies of solvent casted vitamin D3 films as well as printed vitamin D3 films were carried out to observe significant improvement in the stability of printed films as compared to solvent casted films which showed up to 50% degradation.

Biography

Vaishali Kilor is currently working as an Associate Professor at Guru Nanak College of Pharmacy, Nagpur. She has about 15 original research papers published in peer reviewed journals. She is a Reviewer of many reputed journals and has worked on many industrial projects. She is also working as a Consultant at Zim Laboratories Ltd. Her research interests include developing novel drug delivery systems using novel technologies.

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2. **N. P. Sapkal**, Anwar S Daud and Minal N Bonde presented paper on Technology development of Bi/multilayer thin films at "2nd International Conference and Exhibition on Pharmaceutical Development and Technology" held during May 11-12, 2018 in Osaka, Japan.

Nidhi P Sapkal et.al., J Dev Drugs 2018, Volume 7
DOI: 10.4172/2329-6631-C1-026

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2nd International Conference and Exhibition on

PHARMACEUTICAL DEVELOPMENT AND TECHNOLOGY

May 11-12, 2018 Osaka, Japan

Technology development of Bi/multilayer thin films

Nidhi P Sapkal[1], Anwar S Daud[2] and Minal N Bonde[2]
[1]Guru Nanak College of Pharmacy, India
[2]Zim Laboratories Ltd, India

Thin films are ideal dosage form for pediatric, geriatric, dysphagic, mentally challenged and bed ridden patients. These films are thin, flat, elegant, rectangular shaped dosage forms that can be delivered by either oral sublingual or buccal route. In the market, most of the available products are single layered and belong to category of orally dissolving films. A few belong to sublingual and buccal category. The present technology yields monolayer films containing single or multiple actives but is not capable of delivering fixed dose combinations that are incompatible with each other. The present investigation describes technology development of thin films consisting of more than one layer. The final product looks like a single thin layer with different colors/shades/textures on both the sides. The method is capable of producing films with two, three or more layers depending upon the need of the product. These films are inseparable from each other during storage, handling and use and importantly, do not interact physically or chemically at the same time. The technology can also be used to deliver actives with different release profiles in thin film form or to deliver single active with different release profiles. This technology can be applied to many buccal or oral care products which require maintaining unidirectional flow of active into a particular direction. Thus, this is an important way to add more attributes to thin film technology.

Biography

Nidhi P Sapkal is an Academician and Industrial Consultant. She has completed her MPharm from Gujarat University and PhD from Nagpur University. Currently she is working as Professor in Department of Pharmaceutical chemistry, Guru Nanak College of Pharmacy. She is also Principal Research Coordinator at Zim Laboratories Limited, Nagpur. At Zim, she is actively contributing to research and development activities involving novel products and process technologies. She has about 25 research papers and 19 patent applications to her credit. She has delivered many invited lectures in various international conferences.

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3. **K. S. Moharir** presented oral paper on Studies on potential use of spray dried co-processed excipients in formulation, at 2nd edition of Novel Formulations Strategies, in 2nd edition of international conference on Novel formulation strategies held on 12-13 April 2018 at Hotel Ramada, Mumbai organized by SelectBioscience India Pvt. Ltd.

SELECTBIO

CERTIFICATE

AWARDED TO

Keshav S Moharir

for delivering an Oral Presentation entitled

"Studies on Potential use of Spray Dried Co-Processed Excipients in Formulations"

at

2nd Edition of

Novel Formulation Strategies

held in

Mumbai, India

on

April 12 - 13, 2018

on behalf of

Select Biosciences India Private Limited

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Principal
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4. Amandeep Kaur Dhillion**, Suhas Padmane**, Sarika Ghatode presented oral paper on Gel formulation of flavonoid rich fraction of aerial parts of *Hemidesmus indicus* at International conference on Challenges for competitiveness of AYUSH and natural products, held at Delhi Pharmaceutical Sciences and Research University, New Delhi on Feb. 2-4, 2018

O-TNF20

GEL FORMULATION OF FLAVONOID RICH FRACTION OF AERIAL PARTS OF *HEMIDESMUS INDICUS* LINN FOR ITS ANTIMICROBIAL ACTIVITY

Amandeep Kaur Dhillon*, Suhas Padmane, Sarika Ghatode.
GURUNANAK COLLEGE OF PHARMACY, NARI ROAD NAGPUR, MAHARASHTRA 440026

The present study describes evaluation of flavonoid rich fraction of aerial parts of plant Hemidesmus indicus Linn for its antimicrobial activity in gel formulation. Preliminary phytochemical screening were performed on the hydro alcoholic extract of H. indicus showed the presence of flavonoids along with tannins, glycosides and carbohydrates. TLC study indicates the presence of flavonoids when compared with quercetin and rutin as reference standards. Antibacterial assays were performed on different bacteria like P. vulgaris, C. albicans, P. awamori, and M. Furfur. Gel formulation was prepared and its evaluation was carried out for various parameters. White rabbits were used to carry out the skin irritation study for gel formulation. The antimicrobial activity of extract was found against various species among which M. furfur had shown the highest zone of inhibition.

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5. Ashwini Nagpure, **S. B. Waikar, S.R Walde** presented poster on Evaluation of fixed oil from the seed of *Celastrus paniculatus* at International conference on Challenges for competitiveness of AYUSH and natural products, held at Delhi Pharmaceutical Sciences and Research University, New Delhi on Feb. 2-4, 2018.

P-SVA3

EVALUATION OF FIXED OIL FROM THE SEEDS OF *CELASTRUS PANICULATUS*

Ashwini Nagpure[1], Dr shekhar Waikar [2], Dr sheelpriya Walde[3].
Gurunanak College of pharmacy, Nagpur – 440026, India.
Email: ashwininagpure3434@gmail.com

Abstract: The plant *Celastrus paniculatus* Willd, belonging to family *celastraceae* and is commonly known as B.-*Malkangni* (Marathi), *Jyotishmati* (Sanskrit). The plant is an important Ayurvedic drug used in Indian subcontinent. The fixed oil from the seeds are used as bitter laxative, emetics, stimulant, rheumatism, leprosy, gout, various fevers and paralysis. The seeds yield brownish oil which is commonly marketed for the various treatments mentioned above. The survey of literature has reviewed that a very few phytochemical data is available with respect to the evaluation of oil is concerned. In the present investigation, the fixed oil from the seeds was extracted. The oil was evaluated with the help of various physicochemical parameters like solubility, refractive index, specific gravity, acid value, saponification value etc.

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6. Yogita Khade, **Suhas Padmane**, Pornima Kodape presented oral paper on Simultaneous estimation of few polyphenols using HPLC at International conference on Challenges for competitiveness of AYUSH and natural products, held at Delhi Pharmaceutical Sciences and Research University, New Delhi on Feb. 2-4, 2018.

O-SVA11

SIMULTANEOUS ESTIMATION OF FEW POLYPHENOLS USING HPLC

YOGITA P. KHADE, SUHAS P. PADMANE, PORNIMA G. KODAPE
Gurunanak College of Pharmacy, Kamptee Road, Nari, Nagpur– 440026 (m.s), India.

In the present work, a validated RP-HPLC method has been developed for the estimation of four polyphenols viz rutin, myrecetin, quercetin and galangin. All four flavonoids were well resolved using gradient elution of methanol and 0.1% phosphoric acid as mobile phase and Zorbax SB C18 (250×4.6mm, 5µm) column as stationary phase. Linearity of method was carried out in the concentration range of 10- 100 µg/ml shows linear relationship with R^2values of 0.9949, 0.9924, 0.995 and 0.9943 respectively. Precision study indicate maximum % RSD of 4.07. Two marketed formulations, tablet and gel containing some of these flavonoids were used for accuracy and assay. Accuracy of method is ascertained on the basis of maximum recovery of rutin 94.35% and quercetin 94.09%. The method was found to be robust with maximum %RSD 3.72. The present RP-HPLC method for the estimation of polyphenols is accurate, precise, simple and specific.

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7. Kalyani Thombre, **S. B. Waikar, S. R. Walde** presented poster on Isolation and evaluation of anthelmintic activity of flavonoid rich fraction of rhizomes of *Curcuma longa* at International conference on Challenges for competitiveness of AYUSH and natural products, held at Delhi Pharmaceutical Sciences and Research University, New Delhi on Feb. 2-4, 2018.

P-HLH2

ISOLATION AND EVALUATION OF ANTHELMINTIC ACTIVITY OF FLAVONOID RICH FRACTION OF RHIZOMES OF *CURCUMA LONGA*

Kalyani Thombre[1], Dr. Shekhar Waikar [2], Satnam singh Khokhar [3], Dr. Sheelpriya Walde[4].
Gurunanak College of pharmacy, Nagpur – 440026, India.
Email: kalyani.thombre@rediffmail.com

The plant curcuma longa Linn, belonging to family Zingiberaceae, is an important Ayurvedic medicine used extensively in ayurveda and in traditional Indian medicine for more than 2000 years. It is used as an anti-inflammatory, anticancer, antioxidant, antiacne, antibacterial, antifungal, antisepectic, expectorant and antidandruff agent. The rhizomes of curcuma longa have been shown to contain rich amount of flavonoids apart from curcumin. In the present investigation, the rhizomes were collected, dried in shed, coarsely powdered and were used for the extraction of total flavonoid rich fraction. The flavonoid rich fraction was evaluated for the presence of preliminary phytochemical test and thin layer chromatography. The in vitro anthelmintic activity of the flavonoid rich fraction was performed by taking Albendazole as a standard. The parasite used was Haemonchus contortus and results were recorded.

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8. Shraddha Tajne, S. B. Waikar, S. R. Walde presented oral paper on Formulation of face pack containing extract of *Rubia cordifolia* at International conference on Challenges for competitiveness of AYUSH and natural products, held at Delhi Pharmaceutical Sciences and Research University, New Delhi on Feb. 2-4, 2018.

O-TNF12

FORMULATION OF FACE PACK CONTAINING EXTRACT OF *RUBIA CORDIFOLIA* (MANJISTHA)

Shraddha Tajne[1], Dr Shekhar Waikar[2], Archana B. Patre[3], Dr Sheelpriya Walde
Gurunanak college of pharmacy, Nagpur – 440026, India. Email :stajane555@gmail.com

The plant Rubia cordifolia belonging to family Rubiaceae, is an official drug of Indian pharmacopeia 2010 with the common name Manjisthta. It is a well-known Ayurvedic herb popularly known as Indian Madder (English), Manjishta (Marathi), Majit or Manjit (Hindi), Manjistha (Sanskrit). It is extensively used in the treatment of various skin diseases associated with edema and oozing. It is also used in wounds and ulcers, dressings, to dry them up and make them heal promptly. The root powder when mixed with ghee is beneficial for the treatment of acne. Manjistha is used in a number of skin disorders like erysipelas, eczema, acne, scabies and allergic manifestations. The roots are found to contain various classes of chemical constituents out of which the anthraquinone like rubiadin has been proved to be beneficial treating various skin disorders. In the present investigation, the hydroalcoholic extract of Rubia cordifolia was prepared which was rich in Rubiadin content. A face pack was formulated by taking the Rubiadin rich fraction (Rubia cordifolia extract). The face pack has been evaluated with the help of various evaluation parameters.

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Academic Year 2016-17

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1. **A. N. Mungle** presented paper on "Natural alternative to treat cancer: A study on anticancer activity of *Lawsonia inermis* Linn" at ICMR sponsored National Conference on Phytomedicine : A novel approach for treatment of cancer, organised by Kamla Nehru College of Pharmacy, Butibori, Nagpur on 25th & 26th March 2017.

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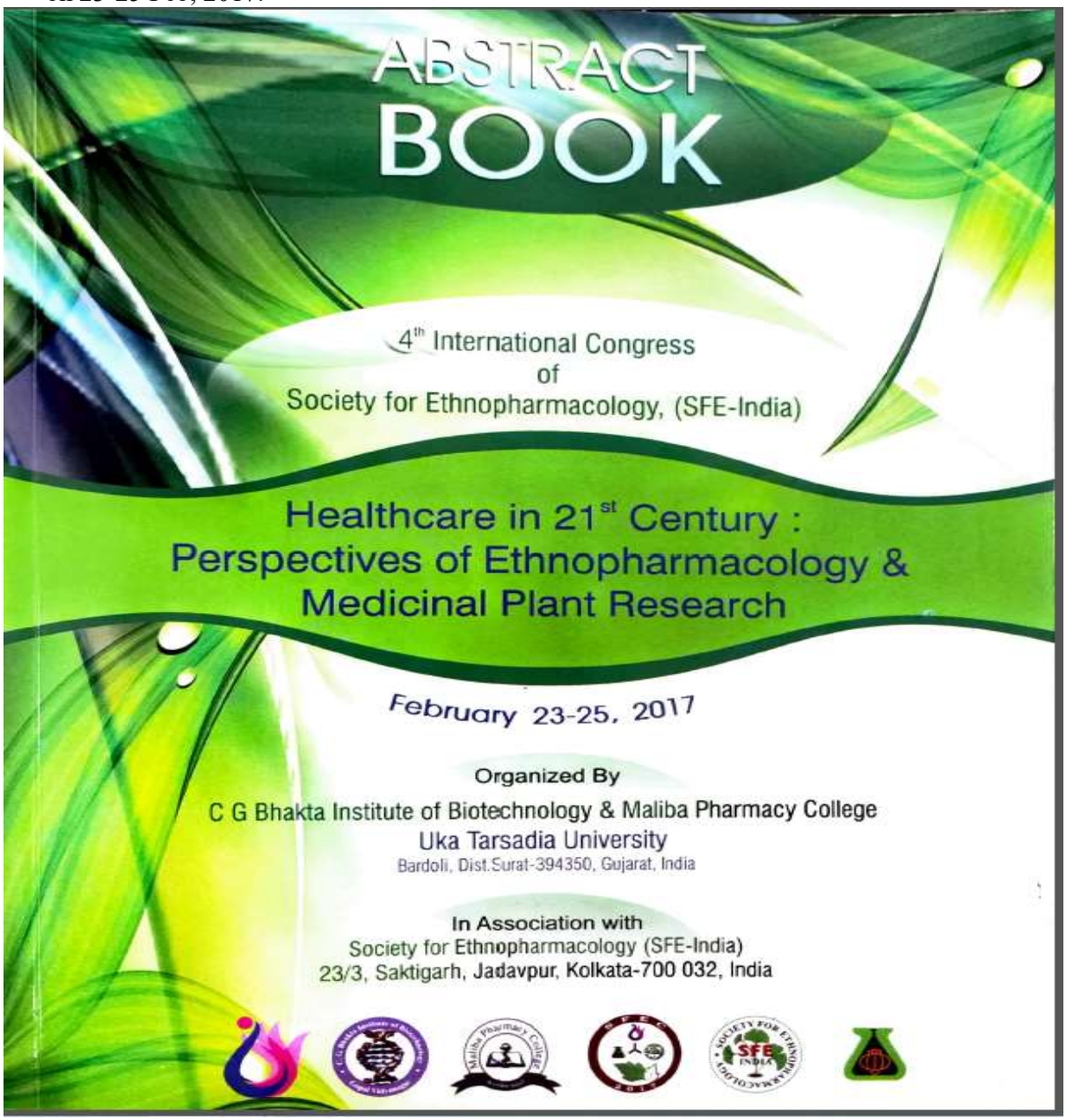
2. **T.M. Rasala,** P.K. Punwatkar **and S.B. Waikar** presented paper on Formulation and Evaluation of gel containing Rubiadin rich fraction of *Rubia Cordifolia* and flavonoid rich fraction of *Hemidesmus Indicus* in 4th International Congress of the Society for Ethnopharmacology (SFEC) in Uka Tarsadia University (UTU), Bardoli, Surat, Gujarat, on 23-25 Feb, 2017.



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SFEC-17/OP/064A

Formulation and Evaluation of Gel Containing Rubiadin Rich Fraction of *Rubia cordifolia* and Flavonoid Rich Fraction of *Hemidesmus indicus*

T.M. Rasala, P.K.Punwatkar and S.B.Waikar

Gurunanak College of Pharmacy, Nagpur, India.
Email: tirupati_rasala@yahoo.co.in

Abstract

The roots of *Rubia cordifolia* and the arial parts of *Hemidesmus indicus* were collected dried and authenticated. The dried roots and dried arial parts were coarsely powdered and extracted to get rubiadin rich fraction and flavonoid rich fraction respectively. The total flavonoid content of flavonoid rich fraction of *H. indicus* were determined by colorimetric method and total rubiadin content of *R. cordifolia* extract was determined by U.V. method. *In vitro* antioxidant activities of both species were determined by DPPH radical and nitric oxide scavenging methods. The isolated phyto-constituents were formulated in to gels using different concentrations. All the gels were evaluated for various parameters like color, pH, spreadability, viscosity etc. Drug content of gel was calculated. The antiwrinkled acivities of gels were also determined.

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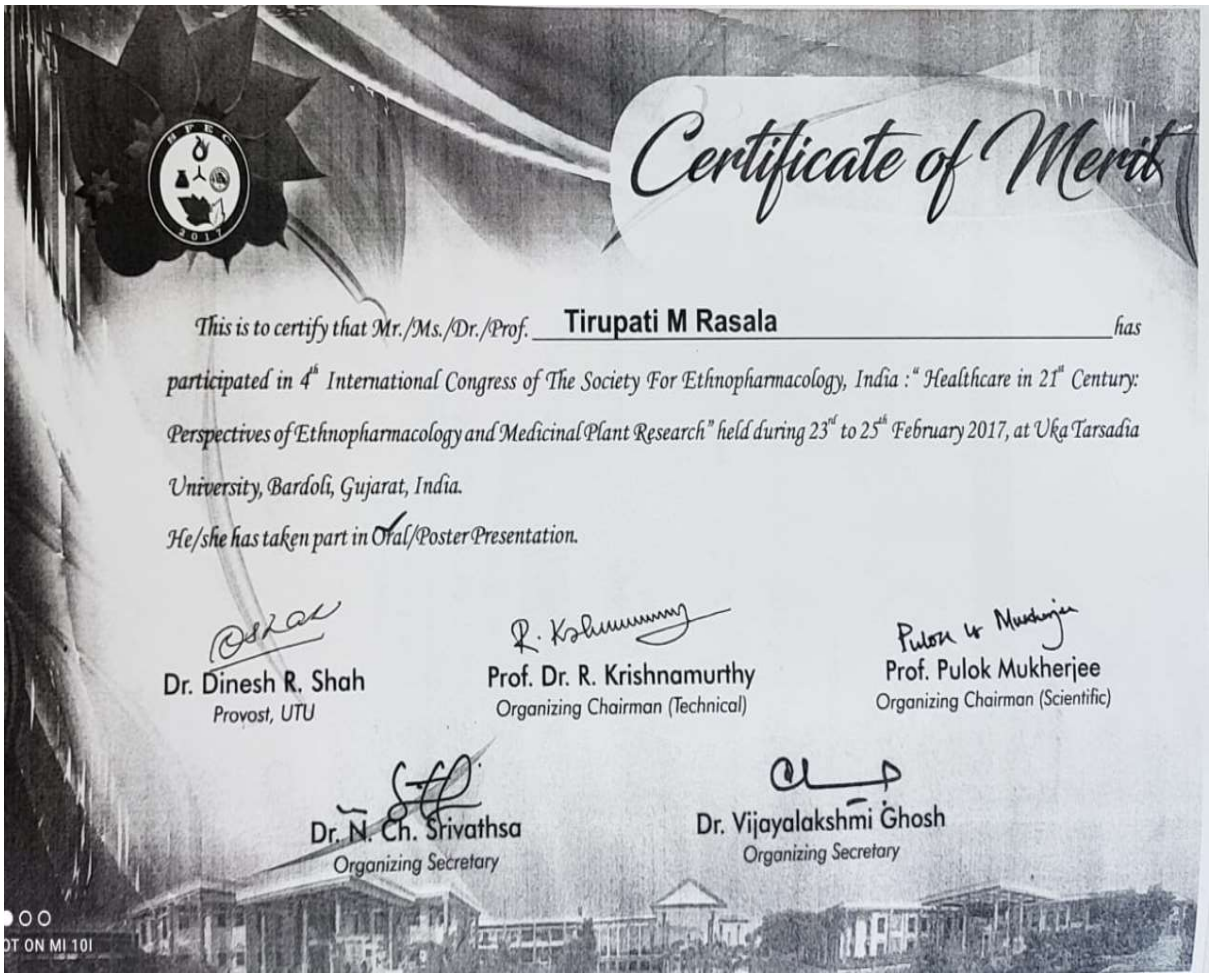

Certificate of Merit

This is to certify that Mr./Ms./Dr./Prof. **Tirupati M Rasala** has participated in 4th International Congress of The Society For Ethnopharmacology, India : "Healthcare in 21st Century: Perspectives of Ethnopharmacology and Medicinal Plant Research" held during 23rd to 25th February 2017, at Uka Tarsadia University, Bardoli, Gujarat, India.

He/she has taken part in Oral/Poster Presentation.

Dr. Dinesh R. Shah
Provost, UTU

Prof. Dr. R. Krishnamurthy
Organizing Chairman (Technical)

Prof. Pulok Mukherjee
Organizing Chairman (Scientific)

Dr. N. Ch. Srivathsa
Organizing Secretary

Dr. Vijayalakshmi Ghosh
Organizing Secretary

Principal
Dr. A. M. Ittadwar
Principal
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Kamptee Road, Nagpur-440 026

3. **G. A. Gurunani, S. R. Walde, A. M. Ittadwar** presented paper on Comparative physicochemical evaluation and estimation of chemicals composition in Triphala Churna and Triphala Rasa in 4th International Congress of the Society for Ethnopharmacology (SFEC) in Uka Tarsadia University (UTU), Bardoli, Surat, Gujarat, on 23-25 Feb, 2017.

SFEC-17/OP/039B

Comparative Physicochemical Evaluation and Estimation of Chemical Composition in Triphala Churna and Triphala Rasa

Gulshan A. Gurunani, Shilpriya R. Walde and Abhay M. Ittadwar,
Gurunanak College of Pharmacy, Dixit Nagar, Nara-Nari Road, Nagpur
Email: gurugul@rediffmail.com

Abstract

Triphala churna is one of the most renowned and extensively used Ayurvedic product with ample of health benefits. Triphala means it is made of three fruits, i.e. *Emblica officinalis* (Amla), *Terminalia bellirica* , (Baheda) and *Terminalia chebula* (Harada). Triphala Churna is rich in antioxidants, it is used for immune system stimulation, improvement of digestion, relief of constipation, gastrointestinal tract cleansing, relief of gas, calms Kapha and Pita, cures skin diseases, improves eye sight, treats chronic fever, diabetes, obesity and relieves laziness. There are no known side-effects of Triphala. As per ayurveda triphala used to be in herbal powder form but now a days Triphala tablets, capsules and Triphala rasa are also available. Amla and Triphala are the major constituent of gallic acid and ascorbic acid. The attempt is being made to judge the Dabur Triphala churna and Gurukul Ayurveda Triphala Rasa for the presence of phytoconstituents. Also, the qualitative and quantitative evaluation of both Triphala churna and Triphala Ras have been done, comparing their Physicochemical evaluation, chemical composition by evaluation of chemical profile by preliminary phytochemical screening, total organic carbon content, total inorganic content, ascorbic acid content, determination of pH, and establishing the safety pertaining to heavy metals. Based on sample solubility, stability and suitability, various mobile phase compositions were tried to get a good resolution and sharp peaks. The standard and sample solution was run in different mobile phases. From the various mobile phases, Water: Acetonitrile (80: 20 %v/v) and pH -3.00 by O-phosphoric acid was chosen with detection wavelength 272 nm. Spectroscopic and chromatographic techniques are studied which proved to be useful in comparing chemical profile of both Dabur Triphala Churna and Gurukul Ayurveda Triphala Rasa.

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Certificate of Merit

This is to certify that Mr./Ms./Dr./Prof. **Gulshan A Gurunani** has participated in 4th International Congress of The Society For Ethnopharmacology, India :" Healthcare in 21st Century: Perspectives of Ethnopharmacology and Medicinal Plant Research" held during 23rd to 25th February 2017, at Uka Tarsadia University, Bardoli, Gujarat, India.

He/she has taken part in Oral/Poster Presentation.

Dr. Dinesh R. Shah
Provost, UTU

Prof. Dr. R. Krishnamurthy
Organizing Chairman (Technical)

Prof. Pulok Mukherjee
Organizing Chairman (Scientific)

Dr. N. Ch. Srivathsa
Organizing Secretary

Dr. Vijayalakshmi Ghosh
Organizing Secretary

Principal
Dr. A. M. Ittadwar
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4. Atharva Bhide, **Subhash Yende, Vipin Pande & Abhay Ittadwar** presented paper on Anticonvulsant activity of *Sargassum ilicifolium* (Brown Algae) in mice in 4th International Congress of the Society for Ethnopharmacology (SFEC) in Uka Tarsadia University (UTU), Bardoli, Surat, Gujarat, on 23-25 Feb, 2017.

SFEC-17/PP/055A

Anticonvulsant activity of *Sargassum ilicifolium* (Brown Algae) in Mice

Atharva Bhide, Subhash Yende, Vipin Pande and Abhay Ittadwar
Gurunanak College of Pharmacy, Nari, Nagpur, MH-440026
Email: atharvabhide007@gmail.com

Abstract

Sargassum ilicifolium (SI) is a tropical and subtropical marine macroalgae (brown algae) found in coastal areas of India. This study investigated the anticonvulsant activity of *Sargassum ilicifolium* in maximal electroshock (MES) induced convulsion and pentylenetetrazole (PTZ) induced convulsion in mice. The result of present study indicated that chloroform extract (600 mg/kg) and ethanol extract (400 mg/kg and 600 mg/kg) of *Sargassum ilicifolium* significantly decreased the duration of tonic hind limb extension in MES model, as well as it significantly increased the latency to onset of convulsions in PTZ model. These results were comparatively similar with the effect of phenytoin (25 mg/kg) and phenobarbitone (20 mg/kg). This activity may be due to the presence of alkaloids, terpenoids, flavonoids, steroids and saponins in chloroform and ethanol extracts of *Sargassum ilicifolium*. However, further research will be necessary to investigate the exact mechanism underlying this anticonvulsant activity.

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5. Ayushi Shahu, rRamteke, **Shekhar Waikar, Keshav Moharir, Krishnakant Bhelkar & Abhay Ittadwar**. Evaluation of Anti Bacterial Activity of the Flavonoid Rich Fraction of *Enicostemma littorale* in 4th International Congress of the Society for Ethnopharmacology (SFEC) in Uka Tarsadia University (UTU), Bardoli, Surat, Gujarat, on 23-25 Feb, 2017.

SFEC-17/PP/098A

Evaluation of Anti Bacterial Activity of the Flavonoid Rich Fraction of *Enicostemma littorale*

Ayushi Shahu, Roshan Ramteke Shekhar Waikar, Keshav Moharir, Krishnakant Bhelkar and Abhay Ittadwar

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Abstract

Enicostemma littorale Blume belonging to the family Gentianaceae is commonly called as Chota–chirayata in hindi & Kadavinayi in Marathi. The plant is found throughout India upto 1500 ft., from the Punjab & Gangetic plains upto Ceylon. It is also widely distributed in Maharashtra (Vidarbha), Madhya Pradesh & Chattisgarh. The plant is used as a bitter, stomachic, tonic & laxative in traditional system of medicine. The dried & ...with honey as a blood

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6. Deepti Bhagchandani1, Bhavana Hirudkar1, **Shekhar Waikar1, Nikhil Adagale2 & Abhay Ittadwar** presented paper on Pharmacognostic Studies & Evaluation of Anthelmintic Activity of Flavonoid Rich Fraction of *Cassia auriculata* in 4th International Congress of the Society for Ethnopharmacology (SFEC) in Uka Tarsadia University (UTU), Bardoli, Surat, Gujarat, on 23-25 Feb, 2017.

Anthelmintic Activity of Flavonoid Rich Fraction of *Cassia auriculata*

Deepti Bhagchandani[1], Bhavana Hirudkar[1], Roshan Shahu[1], Shekhar Waikar[1], Nikhil Adagale[2] and Abhay Ittadwar[1]
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Abstract

Cassia auriculata Linn belonging to the family Fabaceae is commonly called as *Tarvar* in Hindi. The plant grows wild in the dry regions of the Madhya Pradesh, Vidarbha & Rajputana Desert. It is also cultivated in other parts of India. The leaves & fruits have been used as anthelmintic in traditional system of medicine. The bark & root are used as astringent & the roots are used in many skin diseases. The seeds are used in conjunctivitis & also in diabetes. The aerial parts of plant have been shown to contain tannins, amino acids & flavonoids. The survey of literature has revealed that the flavonoid rich fraction of the plant has not been investigated for the anthelmintic activity. The leaves of *C. auriculata* were collected from the local Nagpur region. It was identified by the Department of Botany, RTM Nagpur University, Nagpur with the help of authentic herbarium species. In the present investigations the material was dried in shade & then coarsely powdered & used for the extraction of total flavonoid rich fraction. The dried aerial part was defatted with the help of petroleum ether & the marc was used to isolate flavonoid rich fraction. The flavonoid rich fraction was evaluated qualitatively for the presence of flavonoids with the help of preliminary phytochemical test & Thin Layer Chromatography. The fraction was then evaluated for in vitro anthelmintic activity. The pharmacognostic

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7. Dipika Kalambe, **Amar Deshpande, Shekhar Waikar** presented paper on Formulation and Evaluation of Transdermal Patch of Flavonoid Rich Fraction obtained from *Curcuma longa* in 4th International Congress of the Society for Ethnopharmacology (SFEC) in Uka Tarsadia University (UTU), Bardoli, Surat, Gujarat, on 23-25 Feb, 2017.

SFEC-17/PP/104A

Formulation and Evaluation of Transdermal Patch of Flavonoid Rich Fraction Obtained from *Curcuma Longa*

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Abstract

Curcuma longa (turmeric) is a small rhizomatous perennial herb of family Zingiberaceae originating from south eastern Asia, most probably from India. The plant produces fleshy rhizomes of bright yellow to orange color in its root system, which are the source of the commercially available spice turmeric. In the form of root powder, turmeric is used for its flavouring properties as a spice, food preservative, and food-colouring agent. Turmeric has a long history of therapeutic uses as it is credited with a variety of important beneficial properties such as its antioxidant, antibacterial, anti-inflammatory, analgesic, and digestive properties. Three different varieties of turmeric were purchased from local Nagpur region. It was identified by the Department of Botany, RTM Nagpur University, Nagpur with the help of authentic herbarium species. In the present investigations, the rhizomes were dried in shade and then coarsely powdered and were used for the extraction of total flavonoid fraction. The dried rhizomes were defatted with the help of petroleum ether & the marc was used to isolate flavonoid rich fraction. The flavonoid rich fraction was evaluated qualitatively for the presence of flavonoids with the help of preliminary phytochemical tests and Thin Layer Chromatography. Transdermal patches containing flavonoid rich fractions were formulated and evaluated for various parameters.

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8. Junaid Ansari1, Akshay Kamde1, **Shekhar Waikar1**, Nikhil Adagale & **Abhay Ittadwar** presented paper on Preliminary Phytochemical Screening and Evaluation of Anthelmintic Activity of Flavonoid Rich Fraction of *Clerodendrum phlomidis* in 4th International Congress of the Society for Ethnopharmacology (SFEC) in Uka Tarsadia University (UTU), Bardoli, Surat, Gujarat, on 23-25 Feb, 2017.

SFEC-17/PP/102A

Preliminary Phytochemical Screening and Evaluation of Anthelmintic Activity of Flavonoid Rich Fraction of *Clerodendrum phlomidis*

Junaid Ansari[1], Akshay Kamde[1], Shekhar Waikar[1], Nikhil Adagale[2] and Abhay Ittadwar[1]

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Abstract

Clerodendrum phlomidis Linn belonging to the family Verbanaceae is commonly called as *Vataghni* in Ayurveda and *Airan* or *Arni* in Marathi. It is commonly found throughout India in the drier parts and in Baluchistan. The plant is given to cattle as a cure for diarrhoea and worms. The decoction of the root is aromatic, astringent and used as a demulcent in gonorrhoea. The juice of leaves is used as an alternative and bitter tonic. It is also given to children during convalescence from measles. In southern India, the juice of leaves is given in neglected syphilitic complaints in doses of half an ounce or more twice daily. The stem, leaf and flower parts were reported positive for alkaloids, saponins and tannins. The drug also contain □-sitosterol, □-sitosterol, ceryl alcohol, □-L-rhamnopyranosyl-(1□2)-□-D-glucopyranosyl-7-O-naringin-4□-O-□-D-glucopyranoside-5-methyl ether, D-mannitol, □-D-glucoside of □-sitosterol, □-sitosterol and ceryl alcohol. In the present investigations the material was dried in shade and then coarsely powdered and was used for the extraction of total flavonoid rich fraction. The dried aerial part was defatted with the help of petroleum ether (60°-80°) & the marc was used to isolate flavonoid

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9. Kundan Singh, Shubham Gupta, **Shekhar Waikar, Abhay Ittadwar** & Rajesh Limsay presented paper on Pharmacognostic Studies and Evaluation of Anthelmintic Activity of Flavonoid Rich Fraction of leaves of *Clerodendrum infortunatum* in 4th International Congress of the Society for Ethnopharmacology (SFEC) in Uka Tarsadia University (UTU), Bardoli, Surat, Gujarat, on 23-25 Feb, 2017.

SFEC-17/PP/103A

Pharmacognostic Studies and Evaluation of Anthelmintic Activity of Flavonoid Rich Fraction of Leaves of *Clerodendrum infortunatum*

Kundan Singh[1], Shubham Gupta[1], **Shekhar** Waikar[1], Abhay **Ittadwar**[1] and **Rajesh** Limsay[1]
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Abstract

Clerodendrum infortunatum Linn belonging to the family Verbanaceae is commonly called *Bhant* in Hindi. It is the terrestrial shrub commonly found throughout the plains of India. The fresh juice of the leaves has been used as a vermifuge and in treatment of malaria. The leaves have been employed externally for treating tumour and certain skin diseases. The leaves have been reported to contain saponins, clerodin (a bitter diterpene), flavonoids and some enzymes. The survey of literature has revealed that the flavonoid rich fraction of the plant has not been investigated for the anthelmintic activity. The leaves of C. *infortunatum* were collected from the cultivated fields from the outskirts of the local Nagpur region. It was identified by the Department of Botany, RTM Nagpur University, Nagpur with the help of authentic herbarium species. In the present investigations the material was dried in shade and then coarsely powdered and was used for the extraction of total flavonoid rich fraction. The dried leaves were defatted with the help of petroleum ether & the marc was used to isolate flavonoid rich fraction. The flavonoid rich fraction was evaluated qualitatively for the presence of flavonoids with the help of preliminary phytochemical tests and Thin Layer Chromatography. The fraction was then evaluated for in vitro anthelmintic activity. The pharmacognostic studies of the leaf have also been reported.

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10. Nikhil Chawla, Manjeet Singh Ramgadiya, Mujahid ul Khair, **Tirupati Rasala, Shekhar Waikar & Abhay Ittadwar** presented paper on Solubility Enhancement of Poorly Soluble Oflaxacin Using Natural Surfactant from *Acacia concinna* in 4th International Congress of the Society for Ethnopharmacology (SFEC) in Uka Tarsadia University (UTU), Bardoli, Surat, Gujarat, on 23-25 Feb, 2017.

SFEC-17/PP/101A

Solubility Enhancement of Poorly Soluble Oflaxacin using Natural Surfactant from *Acacia concinna*

Nikhil Chawla, Manjeet Singh Ramgadiya, Mujahid ul Khair, Tirupati Rasala, Shekhar Waikar and Abhay Ittadwar

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Abstract

The pods of *Acacia concinna*, commonly called as 'Shikakai' is a rich source of triterpenoid saponins. The survey of literature revealed that the saponins can act as natural surfactant which increases the solubility of poorly soluble drugs. For pharmaceutical products poorly soluble in water, the use of surfactants becomes

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11. Poonam Patil, Shekhar Waikar, **Krishnakant Bhelkar, Keshav Moharir, Shrikant Tilloo & Abhay Ittadwar** presented paper on Determination of Anti Bacterial activity of the Flavonoid Rich Fraction of Aerial parts of Phyllanthus maderaspatensis in 4th International Congress of the Society for Ethnopharmacology (SFEC) in Uka Tarsadia University (UTU), Bardoli, Surat, Gujarat, on 23-25 Feb, 2017.

Determination of Anti Bacterial activity of the Flavonoid Rich Fraction of Aerial parts of *Phyllanthus maderaspatensis*

Poonam Patil, Shekhar Waikar, Krishnakant Bhelkar, Keshav Moharir, Shrikant Tilloo and Abhay Ittadwar
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Abstract

The plants of the genus *Phyllanthus* belonging to the family Euphorbiaceae is widely distributed in most tropical and sub-tropical countries, and have long been used in folk medicine to treat diabetes, hepatitis B, hepatitis C, urinary bladder disturbances & kidney disturbances. Several compounds including flavonoids, lignans, polyphenols, alkaloids, triterpenes were isolated from the aerial parts & some of them interacts with most of the key enzymes. In India many *Phyllanthus* species have long been used in the treatment of hepatitis, diabetes and inflammatory disorders. The aerial parts of *P. maderaspatensis* were collected from the local Nagpur region. It was identified by the Department of Botany, RTM Nagpur University, Nagpur with the help of authentic herbarium species. In present investigations the material was dried in shade and then coarsely powdered and was used for the extraction of total flavonoid rich fraction. The dried aerial part was defatted with the help of petroleum ether & the marc was used to isolate flavonoid rich fraction. The flavonoid rich fraction was evaluated qualitatively for the presence of flavonoids with the help of preliminary phytochemical tests and Thin Layer Chromatography. The fraction was then evaluated for the anti-bacterial activity with the help of Gram-positive & Gram- negative bacteria.

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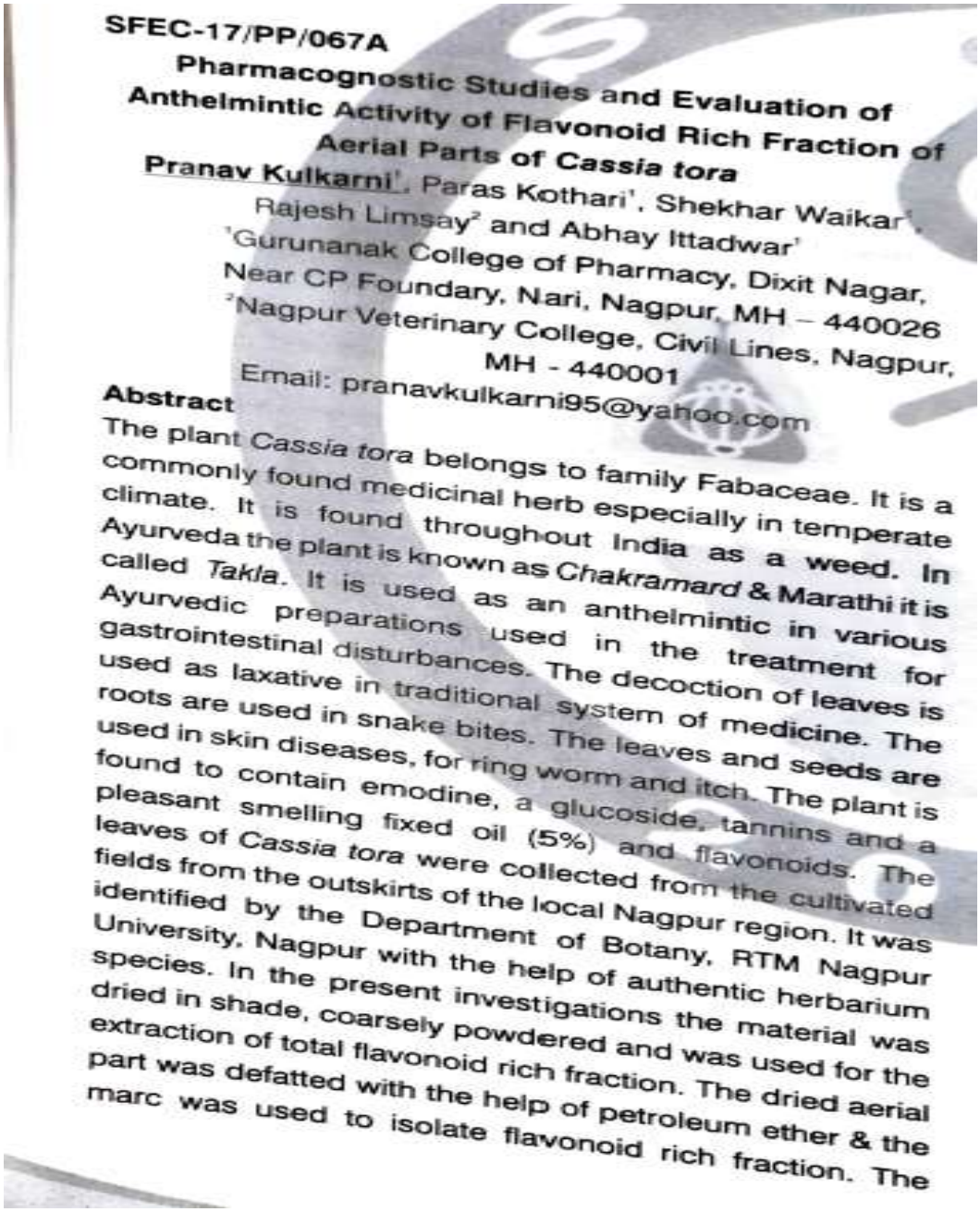
12. Pranav Kulkarni, Paras Kothari, **Shekhar Waikar,** Rajesh Limsay **& Abhay Ittadwar** presented paper on Pharmacognostic Studies and Evaluation of Anthelmintic Activity of Flavonoid Rich Fraction of Aerial Parts of Cassia tora in 4th International Congress of the Society for Ethnopharmacology (SFEC) in Uka Tarsadia University (UTU), Bardoli, Surat, Gujarat, on 23-25 Feb, 2017.



SFEC-17/PP/067A

Pharmacognostic Studies and Evaluation of Anthelmintic Activity of Flavonoid Rich Fraction of Aerial Parts of *Cassia tora*

Pranav Kulkarni[1], Paras Kothari[1], Shekhar Waikar[1], Rajesh Limsay[2] and Abhay Ittadwar[1]
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Abstract

The plant *Cassia tora* belongs to family Fabaceae. It is a commonly found medicinal herb especially in temperate climate. It is found throughout India as a weed. In Ayurveda the plant is known as *Chakramard* & Marathi it is called *Takla*. It is used as an anthelmintic in various Ayurvedic preparations used in the treatment for gastrointestinal disturbances. The decoction of leaves is used as laxative in traditional system of medicine. The roots are used in snake bites. The leaves and seeds are used in skin diseases, for ring worm and itch. The plant is found to contain emodine, a glucoside, tannins and a pleasant smelling fixed oil (5%) and flavonoids. The leaves of *Cassia tora* were collected from the cultivated fields from the outskirts of the local Nagpur region. It was identified by the Department of Botany, RTM Nagpur University, Nagpur with the help of authentic herbarium species. In the present investigations the material was dried in shade, coarsely powdered and was used for the extraction of total flavonoid rich fraction. The dried aerial part was defatted with the help of petroleum ether & the marc was used to isolate flavonoid rich fraction. The

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13. Pranita Kale, Shital Nikhar, **Shekhar Waikar, Tirupati Rasala & Abhay Ittadwar** presented paper on Formulation and Evaluation of Flavonoid Rich Fraction of Aerial Parts of *Sphaeranthus indicus* in 4th International Congress of the Society for Ethnopharmacology (SFEC) in Uka Tarsadia University (UTU), Bardoli, Surat, Gujarat, on 23-25 Feb, 2017.

SFEC-17/PP/008A

Formulation and Evaluation of Flavonoid Rich Fraction of Aerial Parts of *Sphaeranthus indicus*

Pranita Kale, Shital Nikhar, Shekhar Waikar, Tirupati Rasala and Abhay Ittadwar

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Abstract

Sphaeranthus indicus is a commonly grown herb in paddy fields. It is found throughout India ascending the Himalaya up to 5,000 ft from Kumaon to Sikkim. It contains volatile oil, glucoside , alkaloid sphaeranthine, tannins, flavones, isoflavone glycosides & sesquiterpene lactones in the aerial parts. The herb is used as a tonic, diuretic, alterative & aphrodisiac. It is also used in the treatment of many liver diseases. The whole plant and its secondary metabolites are also used as ovicidal, antifeedant, anthelmintic, antimicrobial, antiviral, macrofilaricidal,larvicidal, analgesic, antipyretic, hepatoprotective, antitussive, wound healing, bronchodilatory, mast cell stabilizer, anxiolytic, neuroleptic, immunomodulatory, anti diabetic, antihyperlipidemic, antioxidant, central nervous system depressant, anti arthritic, nephroprotective & anticonvulsant. It is also effective in psoriasis. The survey of literature has revealed that the flavonoid rich fraction of the plant has not been investigated with respect to the formulation aspects. In the present investigations the material was dried in shade and then coarsely powdered and was used for the extraction of total flavonoid rich fraction. The dried aerial part was defatted with the help of petroleum ether & the marc was used to isolate flavonoid rich fraction. The flavonoid rich fraction was evaluated qualitatively for the presence of flavonoids with the help of preliminary phytochemical tests and Thin Layer Chromatography. The flavonoid rich fraction was formulated in a proper dosage form and the physicochemical properties of the dosage form were studied

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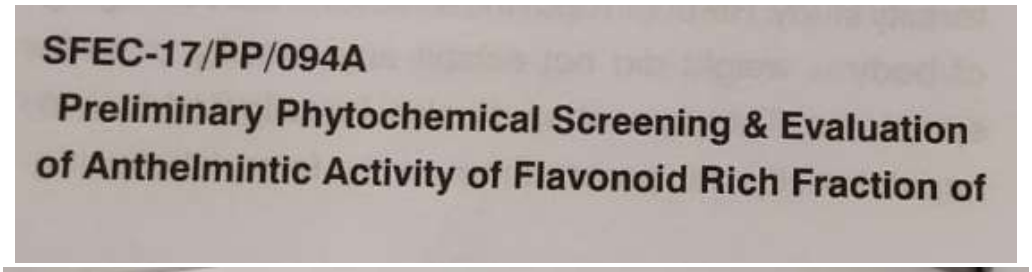
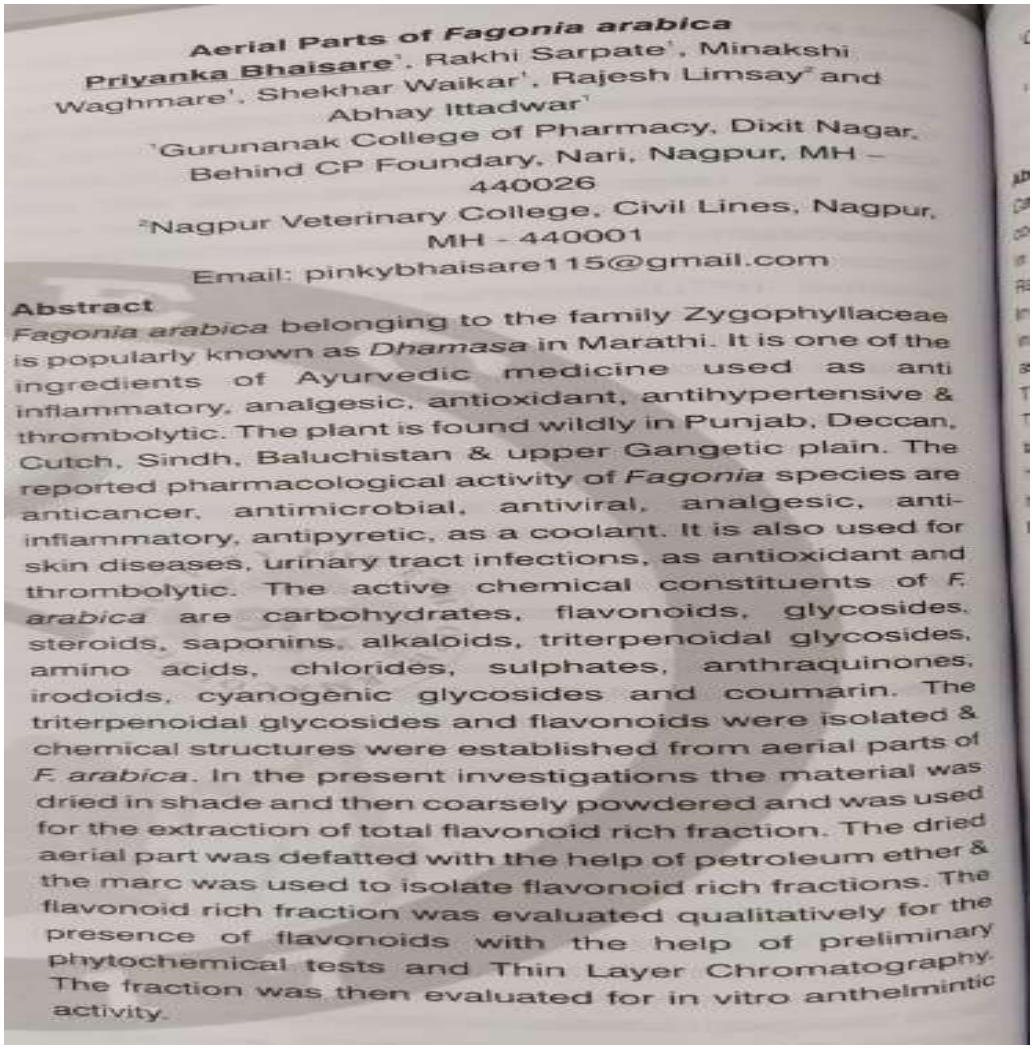
14. Priyanka Bhaisare1, Rakhi Sarpate1, Minakshi Waghmare1, **Shekhar Waikar1,** Rajesh Limsay2 **& Abhay Ittadwar** presented paper on Preliminary Phytochemical Screening & Evaluation of Anthelmintic Activity of Flavonoid Rich Fraction of Aerial Parts of *Fagonia arabica* in 4th International Congress of the Society for Ethnopharmacology (SFEC) in Uka Tarsadia University (UTU), Bardoli, Surat, Gujarat, on 23-25 Feb, 2017.



SFEC-17/PP/094A

Preliminary Phytochemical Screening & Evaluation of Anthelmintic Activity of Flavonoid Rich Fraction of



Aerial Parts of *Fagonia arabica*

Priyanka Bhaisare[1], Rakhi Sarpate[1], Minakshi Waghmare[1], Shekhar Waikar[1], Rajesh Limsay[2] and Abhay Ittadwar[1]

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Abstract

Fagonia arabica belonging to the family Zygophyllaceae is popularly known as *Dhamasa* in Marathi. It is one of the ingredients of Ayurvedic medicine used as anti inflammatory, analgesic, antioxidant, antihypertensive & thrombolytic. The plant is found wildly in Punjab, Deccan, Cutch, Sindh, Baluchistan & upper Gangetic plain. The reported pharmacological activity of *Fagonia* species are anticancer, antimicrobial, antiviral, analgesic, anti-inflammatory, antipyretic, as a coolant. It is also used for skin diseases, urinary tract infections, as antioxidant and thrombolytic. The active chemical constituents of *F. arabica* are carbohydrates, flavonoids, glycosides, steroids, saponins, alkaloids, triterpenoidal glycosides, amino acids, chlorides, sulphates, anthraquinones, irodoids, cyanogenic glycosides and coumarin. The triterpenoidal glycosides and flavonoids were isolated & chemical structures were established from aerial parts of *F. arabica*. In the present investigations the material was dried in shade and then coarsely powdered and was used for the extraction of total flavonoid rich fraction. The dried aerial part was defatted with the help of petroleum ether & the marc was used to isolate flavonoid rich fractions. The flavonoid rich fraction was evaluated qualitatively for the presence of flavonoids with the help of preliminary phytochemical tests and Thin Layer Chromatography. The fraction was then evaluated for in vitro anthelmintic activity.

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15. Sachin Asnani, Nishigandha Pawar, Zahan Panjawani, **Tirupati Rasala, Shekhar Waikar & Abhay Ittadwar** presented paper on Solubility Enhancement of Poorly Soluble Oflaxacin Using Natural Surfactant from *Sapindus trifoliatus* in 4th International Congress of the Society for Ethnopharmacology (SFEC) in Uka Tarsadia University (UTU), Bardoli, Surat, Gujarat, on 23-25 Feb, 2017.

SFEC-17/PP/082B

Solubility Enhancement of Poorly Soluble Oflaxacin Using Natural Surfactant from *Sapindus trifoliatus*

Sachin Asnani, Nishigandha Pawar, Zahan Panjawani, Tirupati Rasala, Shekhar Waikar and Abhay Ittadwar
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Abstract

The nuts of *Sapindus trifoliatus* commonly called as 'Ritha' is a rich source of triterpenoid saponins. The survey of literature revealed that the saponins can act as natural surfactant which increases the solubility of poorly soluble drugs. For pharmaceutical products poorly soluble in water, the use of surfactants becomes inevitable to reduce the interfacial tension between the medium and the drug and to increase solubility of drugs. In the present investigation, the solubilization of Oflaxacin was studied at and above CMC of natural surfactant extracted from the pods of *Sapindus trifoliatus*. The solubility of drug was studied in water and buffer media. The results showed that, the solubility of Oflaxacin increased linearly with increasing surfactant concentration, as a consequence of the association between the drug and the micelles.

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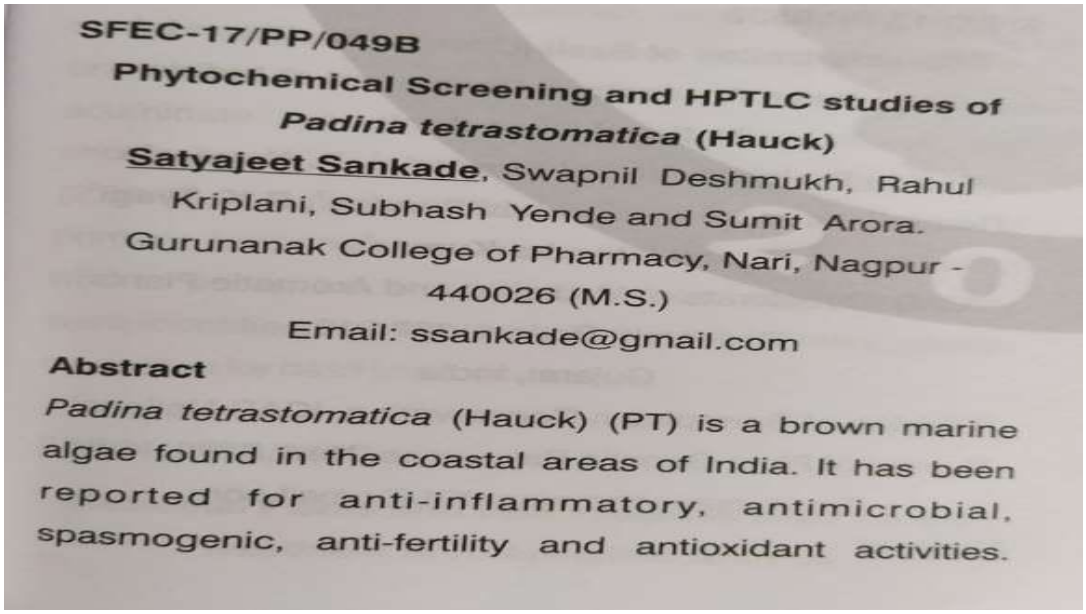
16. Satyajeet Sankade, Swapnil Deshmukh, Rahul Kriplani, **Subhash Yende, Sumit Arora** presented paper on Phytochemical Screening and HPTLC studies of *Padina tetrastomatica (Hauck)* in 4th International Congress of the Society for Ethnopharmacology (SFEC) in Uka Tarsadia University (UTU), Bardoli, Surat, Gujarat, on 23-25 Feb, 2017.



SFEC-17/PP/049B

Phytochemical Screening and HPTLC studies of *Padina tetrastomatica* (Hauck)

Satyajeet Sankade, Swapnil Deshmukh, Rahul Kriplani, Subhash Yende and Sumit Arora.
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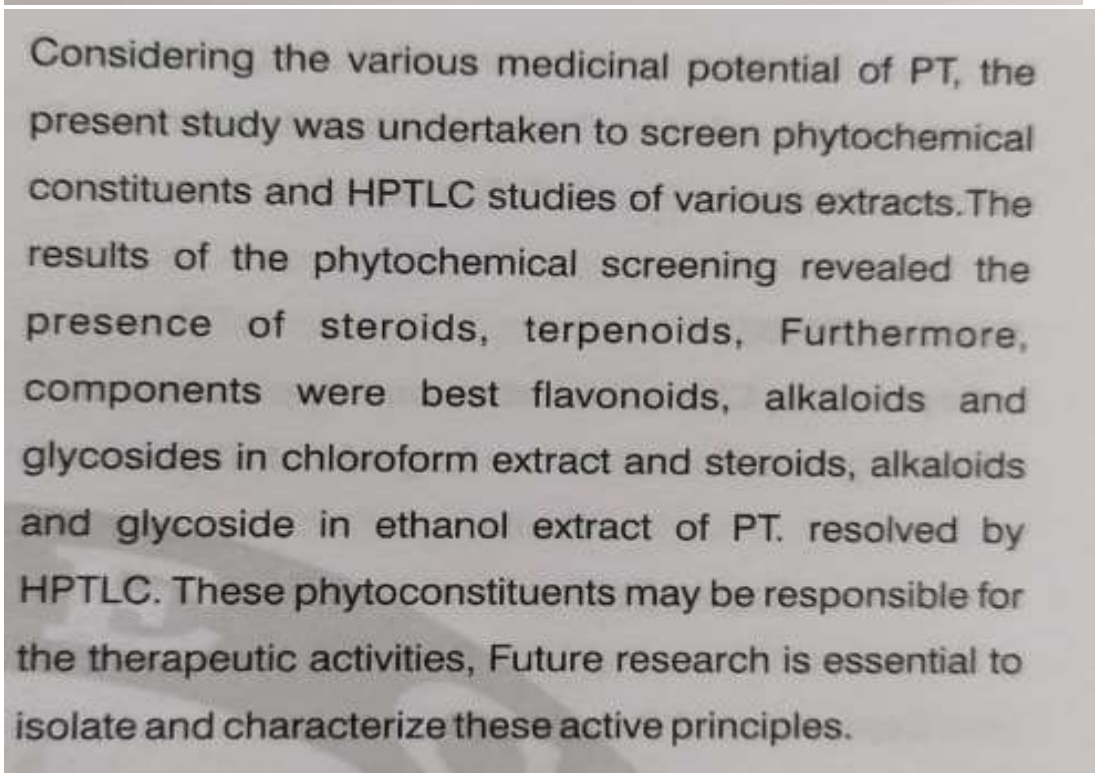
Abstract

Padina tetrastomatica (Hauck) (PT) is a brown marine algae found in the coastal areas of India. It has been reported for anti-inflammatory, antimicrobial, spasmogenic, anti-fertility and antioxidant activities.



Considering the various medicinal potential of PT, the present study was undertaken to screen phytochemical constituents and HPTLC studies of various extracts.The results of the phytochemical screening revealed the presence of steroids, terpenoids, Furthermore, components were best flavonoids, alkaloids and glycosides in chloroform extract and steroids, alkaloids and glycoside in ethanol extract of PT. resolved by HPTLC. These phytoconstituents may be responsible for the therapeutic activities, Future research is essential to isolate and characterize these active principles.

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17. **Sheelpriya Walde, Gulshan Gurunani,** Pranali Kumbhalkar**, Shekhar Waikar & Abhay Ittadwar** presented paper on Study of Anti Microbial Activity containing Flavonoid Rich Fraction of Aerial Parts of *Cassia auriculata* in 4th International Congress of the Society for Ethnopharmacology (SFEC) in Uka Tarsadia University (UTU), Bardoli, Surat, Gujarat, on 23-25 Feb, 2017.

SFEC-17/PP/050B

Study of Anti Microbial Activity containing Flavonoid Rich Fraction of Aerial Parts of *Cassia auriculata*

Sheelpriya Walde, Gulshan Gurunani, Pranali Kumbhalkar, Shekhar Waikar and Abhay Ittadwar
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Abstract

The aerial parts of *Cassia auriculata* Linn were collected, dried and authenticated. The dried aerial parts were pulverised to make coarse material, which were then used for experimental work. 500 gm of aerial parts of the plant were weighed accurately and defatted with petroleum ether. The defatted marc was then refluxed with 80 % ethanol for about 5 to 6 hrs to get the flavonoid rich fraction. The 80% (flavonoid rich fraction) extract of the plant of C. auriculata was then subjected for the evaluation of antimicrobial activity. Flavonoid rich fraction was then subjected to TLC. Various solvents were tried to find the satisfactory developing systems. The results of these studies revealed that 80% ethanolic extract of C. auriculata showed the presence of significant amount of flavonoids (14% w/w). Antimicrobial activity of the

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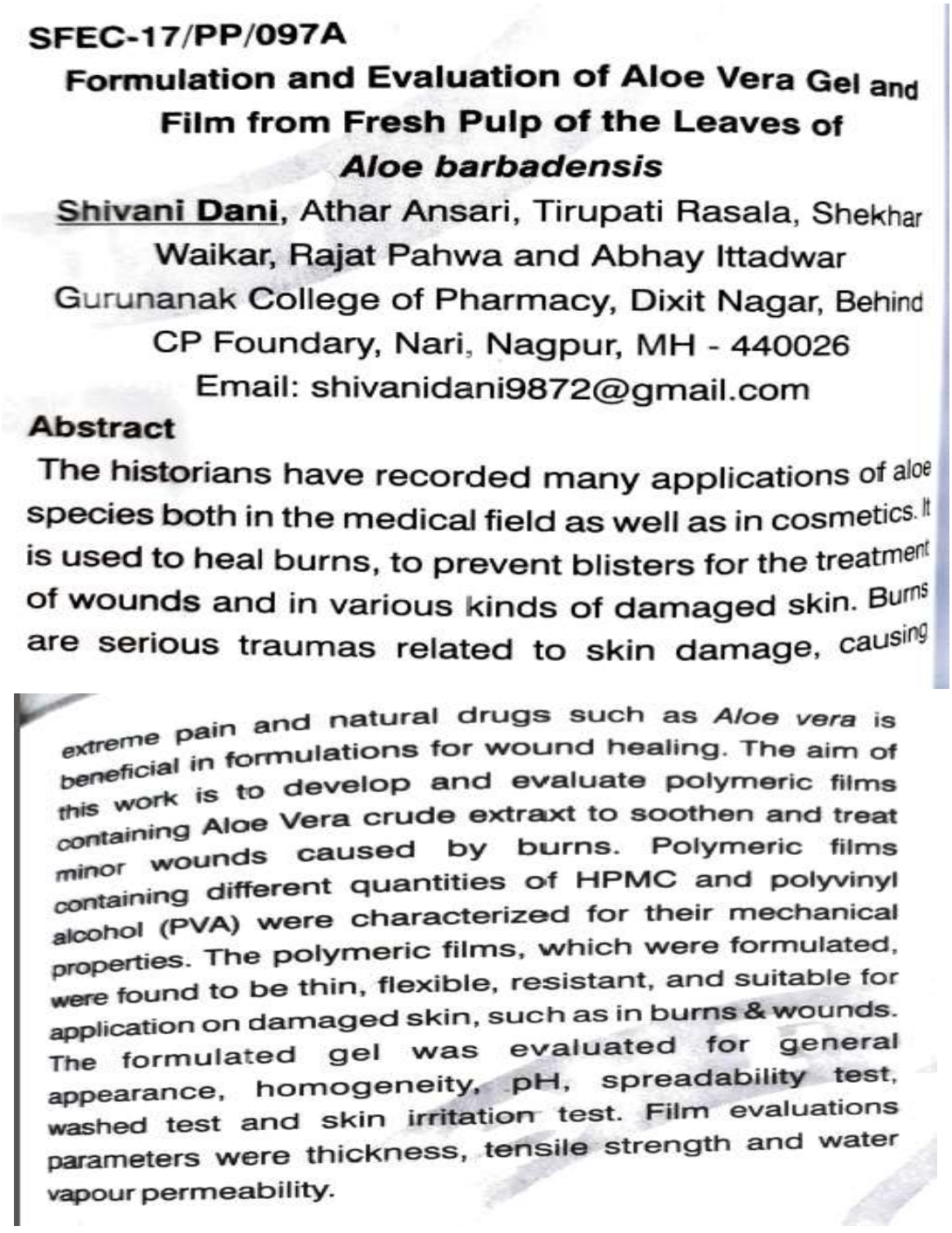
18. Shivani Dani, Athar Ansari, **Tirupati Rasala. Shekhar Waikar**, Rajat Pahwa & **Abhay Ittadwar** presented paper on Formulation and Evaluation of Aloe Vera Gel and Film from Fresh Pulp of the Leaves of *Aloe barbadensis* in 4th International Congress of the Society for Ethnopharmacology (SFEC) in Uka Tarsadia University (UTU), Bardoli, Surat, Gujarat, on 23-25 Feb, 2017.



SFEC-17/PP/097A

Formulation and Evaluation of Aloe Vera Gel and Film from Fresh Pulp of the Leaves of *Aloe barbadensis*

Shivani Dani, Athar Ansari, Tirupati Rasala, Shekhar Waikar, Rajat Pahwa and Abhay Ittadwar
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Abstract

The historians have recorded many applications of aloe species both in the medical field as well as in cosmetics. It is used to heal burns, to prevent blisters for the treatment of wounds and in various kinds of damaged skin. Burns are serious traumas related to skin damage, causing extreme pain and natural drugs such as *Aloe vera* is beneficial in formulations for wound healing. The aim of this work is to develop and evaluate polymeric films containing Aloe Vera crude extraxt to soothen and treat minor wounds caused by burns. Polymeric films containing different quantities of HPMC and polyvinyl alcohol (PVA) were characterized for their mechanical properties. The polymeric films, which were formulated, were found to be thin, flexible, resistant, and suitable for application on damaged skin, such as in burns & wounds. The formulated gel was evaluated for general appearance, homogeneity, pH, spreadability test, washed test and skin irritation test. Film evaluations parameters were thickness, tensile strength and water vapour permeability.

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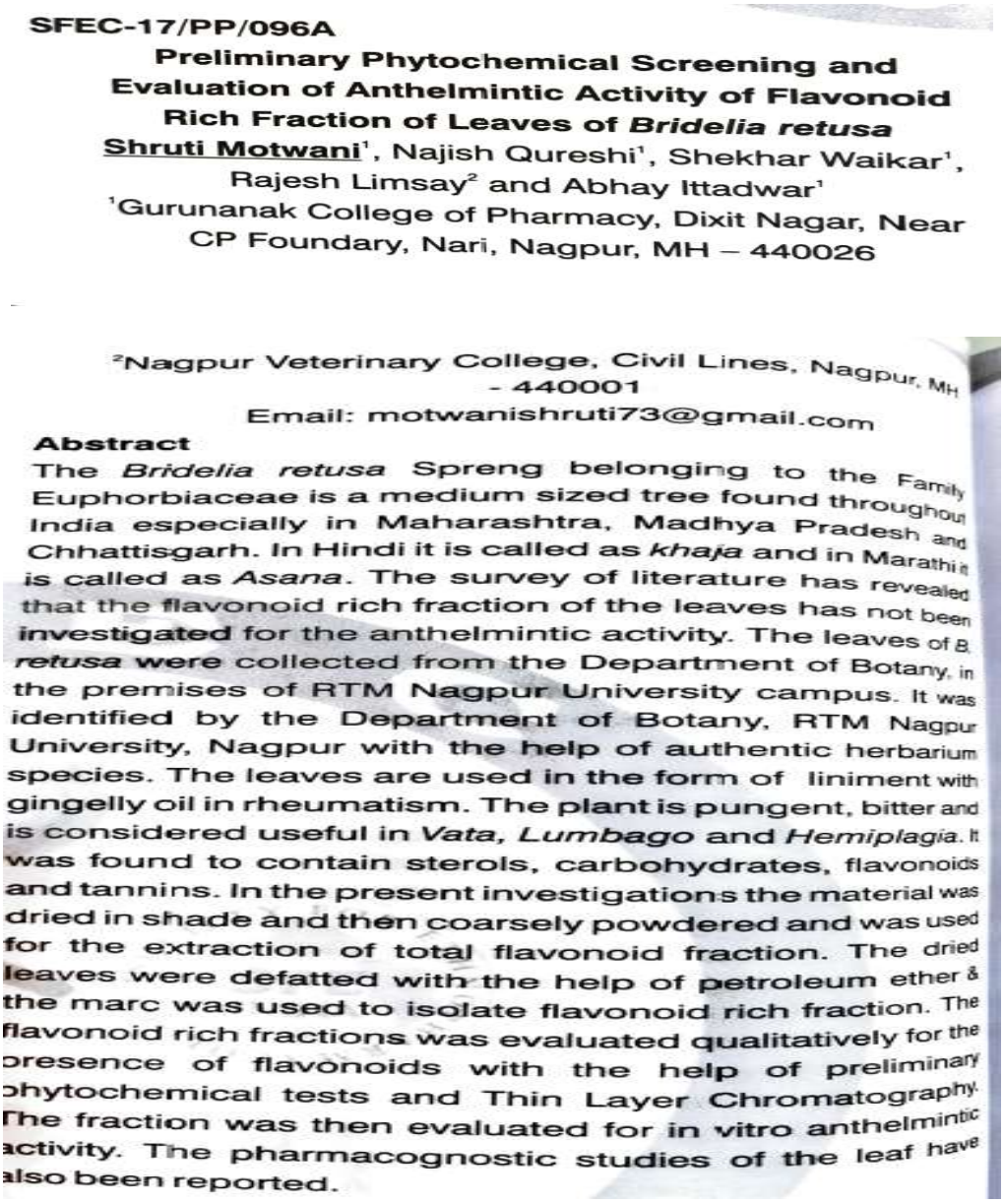
19. Shruti Motwani1, Najish Qureshi1, **Shekhar Waikar1,** Rajesh Limsay2 **& Abhay Ittadwar** presented paper on Preliminary Phytochemical Screening and Evaluation of Anthelmintic Activity of Flavonoid Rich Fraction of Leaves of *Bridelia retusa* in 4th International Congress of the Society for Ethnopharmacology (SFEC) in Uka Tarsadia University (UTU), Bardoli, Surat, Gujarat, on 23-25 Feb, 2017.



SFEC-17/PP/096A

Preliminary Phytochemical Screening and Evaluation of Anthelmintic Activity of Flavonoid Rich Fraction of Leaves of *Bridelia retusa*

Shruti Motwani[1], Najish Qureshi[1], Shekhar Waikar[1], Rajesh Limsay[2] and Abhay Ittadwar[1]
[1]Gurunanak College of Pharmacy, Dixit Nagar, Near CP Foundary, Nari, Nagpur, MH – 440026
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Abstract

The *Bridelia retusa* Spreng belonging to the Family Euphorbiaceae is a medium sized tree found throughout India especially in Maharashtra, Madhya Pradesh and Chhattisgarh. In Hindi it is called as *khaja* and in Marathi it is called as *Asana*. The survey of literature has revealed that the flavonoid rich fraction of the leaves has not been investigated for the anthelmintic activity. The leaves of *B. retusa* were collected from the Department of Botany, in the premises of RTM Nagpur University campus. It was identified by the Department of Botany, RTM Nagpur University, Nagpur with the help of authentic herbarium species. The leaves are used in the form of liniment with gingelly oil in rheumatism. The plant is pungent, bitter and is considered useful in *Vata, Lumbago* and *Hemiplagia*. It was found to contain sterols, carbohydrates, flavonoids and tannins. In the present investigations the material was dried in shade and then coarsely powdered and was used for the extraction of total flavonoid fraction. The dried leaves were defatted with the help of petroleum ether & the marc was used to isolate flavonoid rich fraction. The flavonoid rich fractions was evaluated qualitatively for the presence of flavonoids with the help of preliminary phytochemical tests and Thin Layer Chromatography. The fraction was then evaluated for in vitro anthelmintic activity. The pharmacognostic studies of the leaf have also been reported.

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20. Shrutika Jain, Chetan Pokar, **Shekhar Waikar, Krishnakant Bhelkar, Keshav Moharir & Shrikant Tilloo** presented paper on Pharmacognostic Studies & Assessment of Anti Bacterial Activity of the Flavonoid Rich Fraction of *Tephrosia purpurea* in 4th International Congress of the Society for Ethnopharmacology (SFEC) in Uka Tarsadia University (UTU), Bardoli, Surat, Gujarat, on 23-25 Feb, 2017.

SFEC-17/PP/099A

Pharmacognostic Studies & Assessment of Anti Bacterial Activity of the Flavonoid Rich Fraction of *Tephrosia purpurea*

Shrutika Jain, Chetan Pokar, Shekhar Waikar, Krishnakant Bhelkar, Keshav Moharir and Shrikant Tilloo
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Abstract

The plant *Tephrosia purpurea* Linn belonging to the family Fabaceae is an annual herb which is wildly grown throughout the plains of India, Ceylon, tropical Africa and many sub tropical regions. In Ceylon, the plant is employed as anthelmintic for children. It is also used as a blood purifier. The decoctions of pods and leaves are used as a vermifuge and to stop vomiting. The aerial parts have been shown to contain the rich amount of flavonoids including isoflavones, flavanones, chalcones, flavonols and sterols. It is a good source of minerals and amino acids. In present investigations the material was dried in shade and then coarsely powdered and was used for the extraction of total flavonoid rich fraction. The dried aerial part was defatted with the help of petroleum ether & the marc was used to isolate flavonoid rich fraction. The flavonoid rich fraction was evaluated qualitatively for the presence of flavonoids with the help of preliminary phytochemical test and Thin Layer Chromatography. The fraction was then evaluated for anti-bacterial activity with the help of Gram-positive, Gram- negative bacteria. The pharmacognostic studies of leaf & stem were reported.

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21. Simran Kukreja1, Shraddha Shahu1, **Shekhar Waikar1, Abhay Ittadwar1** & Rajesh Limsay presented paper on Pharmacognostic Studies & Evaluation of Anthelmintic Activity of Flavonoid Rich Fraction of Aerial Parts of *Tephrosia purpurea* in 4th International Congress of the Society for Ethnopharmacology (SFEC) in Uka Tarsadia University (UTU), Bardoli, Surat, Gujarat, on 23-25 Feb, 2017.

...udies of leaf & stem were reported.

SFEC-17/PP/100A

Pharmacognostic Studies & Evaluation of Anthelmintic Activity of Flavonoid Rich Fraction of Aerial Parts of *Tephrosia purpurea*

Simran Kukreja[1], Shraddha Shahu[1], Shekhar Waikar[1], Abhay Ittadwar[1] and Rajesh Limsay[2]
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Abstract

The plant *Tephrosia purpurea* Linn belonging to the family Fabaceae is a herb which is wildly grown throughout the plains of India, Ceylon, tropical Africa and many sub tropical regions. In Ceylon, the plant is employed as anthelmintic for children. It is also used as a blood purifier. The decoctions of pods and leaves are used as a vermifuge and to stop vomiting. The aerial parts have been shown to contain the rich amount of flavonoids including isoflavones, flavanones, chalcones, flavonols and sterols. It is a good source of minerals and amino acids. In the present investigations the material was dried in shade and then coarsely powdered and was used for the extraction of total flavonoid fraction. The dried aerial part was defatted with the help of petroleum ether & the marc was used to isolate flavonoid rich fraction. The flavonoid rich fraction was evaluated qualitatively for the presence of flavonoids with the help of preliminary phytochemical tests and Thin Layer Chromatography. The fraction was then evaluated for in vitro anthelmintic activity. The pharmacognostic studies of the plant have also been reported.

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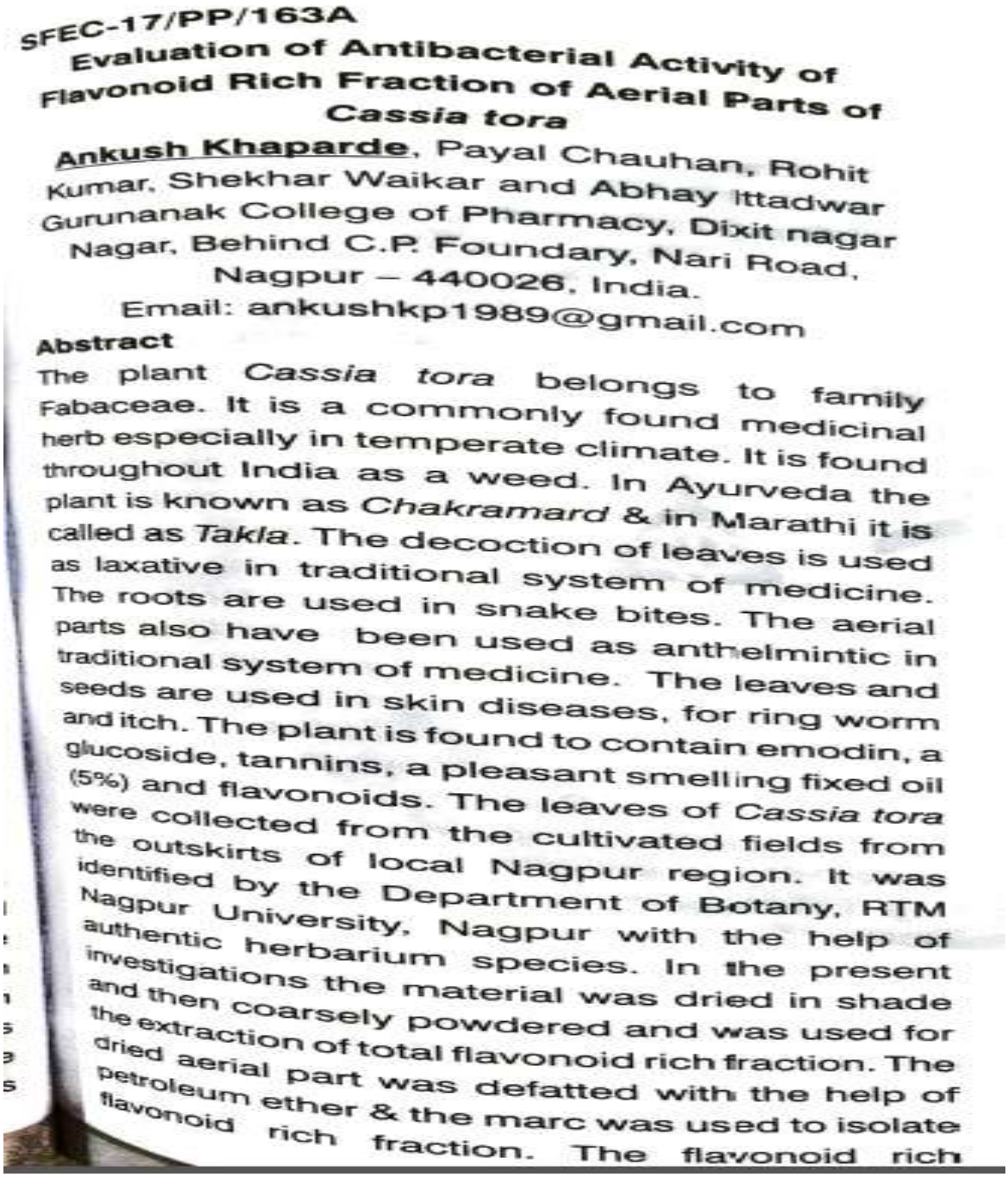
22. Ankush Khaparde, Payal Chauhan, Rohit Kumar, **Shekhar Waikar & Abhay Ittadwar** presented paper on Evaluation of Antibacterial Activity of Flavonoid Rich Fraction of Aerial Parts of *Cassia tora* in 4th International Congress of the Society for Ethnopharmacology (SFEC) in Uka Tarsadia University (UTU), Bardoli, Surat, Gujarat, on 23-25 Feb, 2017.



SFEC-17/PP/163A

Evaluation of Antibacterial Activity of Flavonoid Rich Fraction of Aerial Parts of *Cassia tora*

Ankush Khaparde, Payal Chauhan, Rohit Kumar, Shekhar Waikar and Abhay Ittadwar
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Abstract

The plant *Cassia tora* belongs to family Fabaceae. It is a commonly found medicinal herb especially in temperate climate. It is found throughout India as a weed. In Ayurveda the plant is known as *Chakramard* & in Marathi it is called as *Takla*. The decoction of leaves is used as laxative in traditional system of medicine. The roots are used in snake bites. The aerial parts also have been used as anthelmintic in traditional system of medicine. The leaves and seeds are used in skin diseases, for ring worm and itch. The plant is found to contain emodin, a glucoside, tannins, a pleasant smelling fixed oil (5%) and flavonoids. The leaves of *Cassia tora* were collected from the cultivated fields from the outskirts of local Nagpur region. It was identified by the Department of Botany, RTM Nagpur University, Nagpur with the help of authentic herbarium species. In the present investigations the material was dried in shade and then coarsely powdered and was used for the extraction of total flavonoid rich fraction. The dried aerial part was defatted with the help of petroleum ether & the marc was used to isolate flavonoid rich fraction. The flavonoid rich

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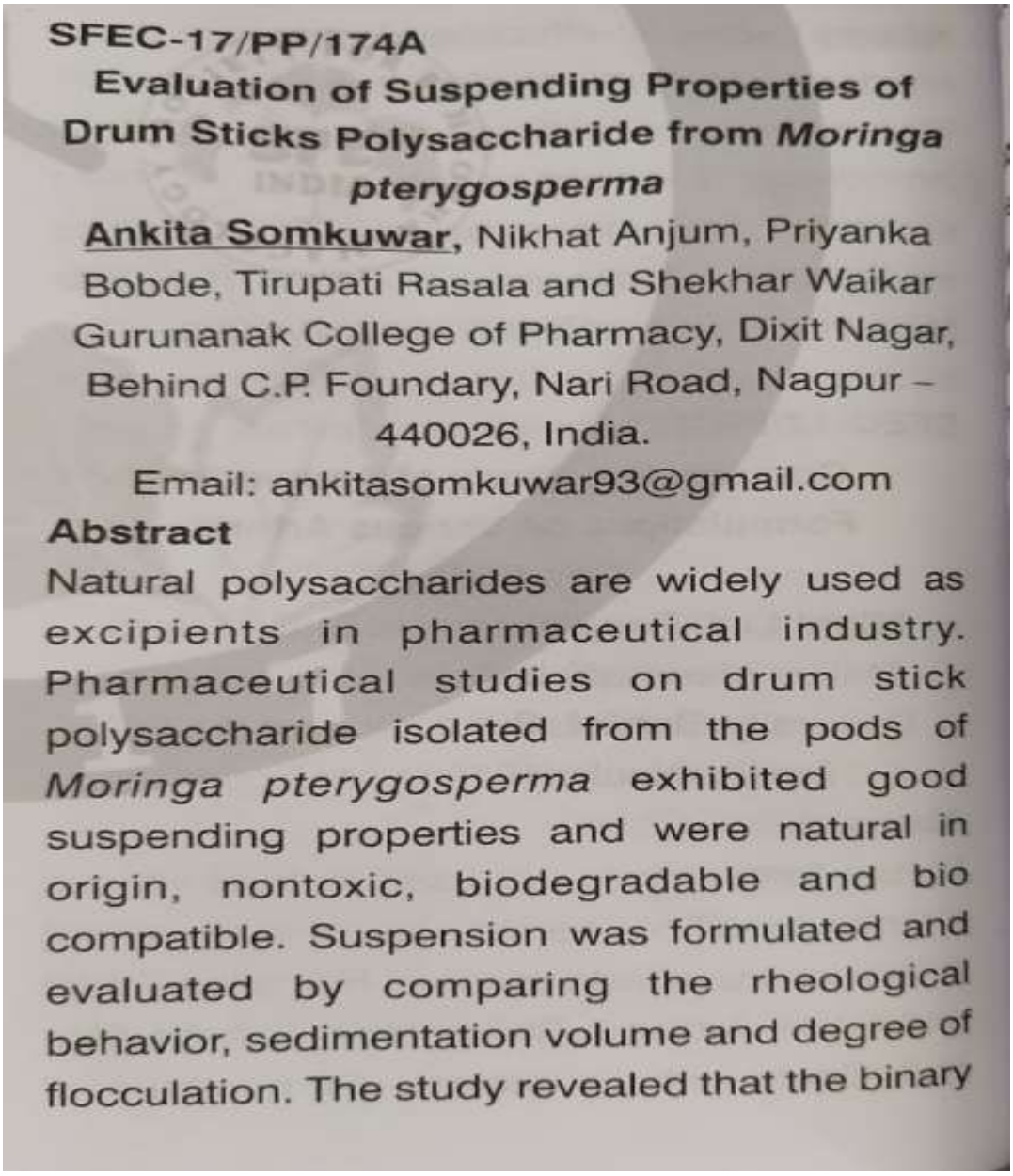
23. Ankita Somkuwar, Nikhat Anjum, Priyanka Bobde**, Tirupati Rasala & Shekhar Waikar** presented paper on Evaluation of Suspending Properties of Drum Sticks Polysaccharide From *Moringa Pterygosperma* in 4th International Congress of the Society for Ethnopharmacology (SFEC) in Uka Tarsadia University (UTU), Bardoli, Surat, Gujarat, on 23-25 Feb, 2017.



SFEC-17/PP/174A

Evaluation of Suspending Properties of Drum Sticks Polysaccharide from *Moringa pterygosperma*

Ankita Somkuwar, Nikhat Anjum, Priyanka Bobde, Tirupati Rasala and Shekhar Waikar
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Abstract

Natural polysaccharides are widely used as excipients in pharmaceutical industry. Pharmaceutical studies on drum stick polysaccharide isolated from the pods of *Moringa pterygosperma* exhibited good suspending properties and were natural in origin, nontoxic, biodegradable and bio compatible. Suspension was formulated and evaluated by comparing the rheological behavior, sedimentation volume and degree of flocculation. The study revealed that the binary

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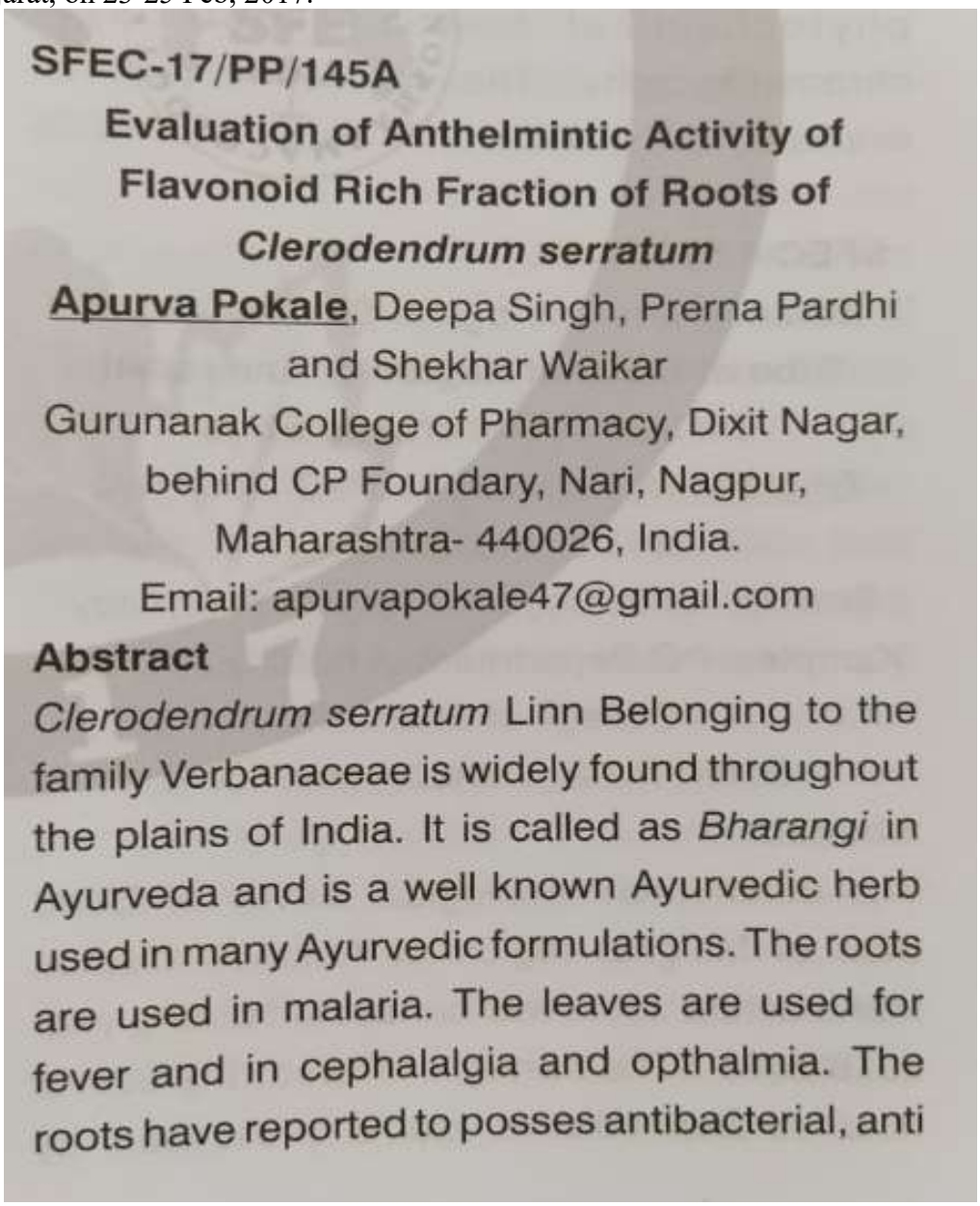
24. Apurva Pokale, Deepa Singh, Prerna Pardhi, **Shekhar Waikar** presented paper on Evaluation of Anthelmintic Activity of Flavonoid Rich Fraction of Roots of *Clerodendrum serratum* in 4th International Congress of the Society for Ethnopharmacology (SFEC) in Uka Tarsadia University (UTU), Bardoli, Surat, Gujarat, on 23-25 Feb, 2017.



SFEC-17/PP/145A

Evaluation of Anthelmintic Activity of Flavonoid Rich Fraction of Roots of *Clerodendrum serratum*

Apurva Pokale, Deepa Singh, Prerna Pardhi and Shekhar Waikar
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Abstract

Clerodendrum serratum Linn Belonging to the family Verbanaceae is widely found throughout the plains of India. It is called as *Bharangi* in Ayurveda and is a well known Ayurvedic herb used in many Ayurvedic formulations. The roots are used in malaria. The leaves are used for fever and in cephalalgia and opthalmia. The roots have reported to posses antibacterial, anti

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25. Kajol Gupta, Shalakha Sahare, Nidhi Sahu, **Shekhar Waikar and Tirupati Rasala** presented paper on Role of Dashmoolarishta and Astavarga Plants in Immunomodulation – Current Review in 4th International Congress of the Society for Ethnopharmacology (SFEC) in Uka Tarsadia University (UTU), Bardoli, Surat, Gujarat, on 23-25 Feb, 2017.

SFEC-17/PP/080B

Role of Dashmoolarishta and Astavarga Plants in Immunomodulation – Current Review

Kajol Gupta, Shalakha Sahare, Nidhi Sahu, Shekhar Waikar and Tirupati Rasala
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Abstract

Many herbal drugs and pure phytoconstituents have been proved to have immunomodulatory activities. The role of immunomodulators in the treatment of diseases like allergy, asthama, fever, liver disorder, Diabetes mellitus, etc. is well established. The medicinal plants used in the Ayurvedic preparations such as "Dashmoolarishta" have been shown to posses immunomodulatory activities. In ayurvedic system of medicine, the plants belonging to "Astavarga" category are very much important because of their immunomodulatory activities. Similarly the herbs belonging to "Astavarga" family have been successfully used as immunostimulant in management of various diseases. The survey of literature has revealed that these plants have not yet been thoroughly investigated with respect to their pharmacological and phytochemical profiles as for as their immunomodulatory activities are concerned. As per WHO guidelines the ayurvedic medicinal plants have to be properly standardised with respect to their chemo-profiling, TLC- finger printing, toxicity and pharmacological activies of their major phytoconstituents. In the present review the plants belonging to "Astavarga" category and those included in "Dashmoolarishta" have been throughly disscussed with respect to their correlation between the therapeutically active major secondary metabolites and the ...atory activities.

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26. Nikhat Anjum, Ankita Somkuwar, Priyanka Bobde, Tirupati Rasala, **Shekhar Waikar** presented paper on Drum Sticks Polysaccharide as Emulsifying Agent in Emulsion Formulation in 4th International Congress of the Society for Ethnopharmacology (SFEC) in Uka Tarsadia University (UTU), Bardoli, Surat, Gujarat, on 23-25 Feb, 2017.

SFEC-17/PP/173A

Drum Sticks Polysaccharide as Emulsifying Agent in Emulsion Formulation

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Abstract

Gums and mucilages are the most available ingredients with wide range of application in pharmaceutical and cosmetic industries. Industrial gums and mucilages are for most water soluble polysaccharides with wide range of applications in food and cosmetic industries. Natural polysaccharides are widely used as excipients in pharmaceutical industry. Pharmaceutical studies on drum stick polysaccharide isolated from the pods of *Moringa pterygosperma* exhibited good emulsifying properties and were natural in origin, nontoxic, biodegradable and bio compatible. Series of emulsion formulations were prepared by wet gum method using different concentrations of drum stick polysaccharide as emulgent. It can therefore serves as an alternative to pharmaceutical adjuvant to cater the needs of pharmaceutical industry.

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27. Priyanka Wadhai, Sneha Hedau, **Shekhar Waikar, Tirupati Rasala** presented paper on The Role of Herbal Medicine in the Treatment of Psoriasis and Leucoderma in 4th International Congress of the Society for Ethnopharmacology (SFEC) in Uka Tarsadia University (UTU), Bardoli, Surat, Gujarat, on 23-25 Feb, 2017.

SFEC-17/PP/164A

The Role of Herbal Medicine in the Treatment of Psoriasis and Leucoderma

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Abstract

Psoriasis is a common skin condition which can be itchy and painful. About 3% of people in the world are suffering from psoriasis. It is a hyperproliferative autoimmune skin disorder. The synthetic drugs used in psoriasis have severe side effects and therefore it is need of an hour to explore the alternative treatment for psoriasis such as the secondary metabolite from the medicinal plants including Ayurvedic drugs. Leucoderma is the most common chronic depigmentation or hypopigmentation disorder affecting 2% of the world population. Many Ayurvedic drugs and herbal remedies have long been used in the treatment of psoriasis and leucoderma. As per WHO guidelines, these medicines have not yet been standardized phytochemically and pharmacologically. In the present review, the role of various herbal medicines used in the treatment of leucoderma and psoriasis has been discussed. The role of various secondary

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28. Simran Pal, Sneha Raut, Sucharita Sankade & **Shekhar Waikar** presented paper on Phytosomes: A Novel Herbal Drugs Delivery System in 4th International Congress of the Society for Ethnopharmacology (SFEC) in Uka Tarsadia University (UTU), Bardoli, Surat, Gujarat, on 23-25 Feb, 2017.

SFEC-17/PP/158A

PHYTOSOMES: A Novel Herbal Drugs Delivery System

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Abstract

Many herbal medicines have now been used to treat various diseases including Diabetes Mellitus, Cardiovascular diseases, Hepatic disorders, Cancer and AIDS. Many secondary metabolites have been isolated, identified and therapeutically used in the management of such diseases. As per WHO guidelines all these herbal medicines and natural drugs need to be standardized phytochemically and pharmacologically. It has been observed that many therapeutically important secondary metabolites such as flavonoids, polyphenols, cumarins, triterpenoid glycosides are having less lipid solubility and high molecular size, which results in poor absorption and decreased bioavailability. In the recent years, many attempts have been made to formulate such type of phytoconstituents to overcome these problems. Phytosomes are the vesicular drug delivery systems which protect the phytoconstitutes from the destruction in GI tract and they show improved absorption which produces better bioavailability. In the present

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29. Roshan Shahu, Minakshi Waghmare, Bhavana Hirudkar, Roshan Ramteke **& Bindu Jacob** presented paper on Ethnopharmacological Properties of *Helicteres isora*: An Review in 4th International Congress of the Society for Ethnopharmacology (SFEC) in Uka Tarsadia University (UTU), Bardoli, Surat, Gujarat, on 23-25 Feb, 2017.

SFEC-17/PP/054A

Ethnopharmacological Properties of *Helicteres isora*: A Review

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Abstract

Helicteres isora Linn belonging to family Sterculiaceae, commonly called as Marorphali in Hindi, Avartani in Sanskrit. It is commonly found throughout India from Punjab to Bengal, Jammu to South India & in Pakistan, Nepal, Myanmar, Thailand, Sri Lanka. It gregariously grows in dry deciduous forest of central & western India up to 1500m on the hill slopes. *H. isora* is a rich source of antioxidants, carbohydrates, protein, fiber, calcium, phosphorus & iron. *H. isora* has been reported in traditional system of medicine, Ayurveda & folklore for its prominent medicinal properties. Numerous studies have revealed the presence of phenol, flavonoids, alkaloids, phytosterols, carotenoids, tannins, fixed oils & fats from different parts of plant. The roots and the bark are used as an expectorant, demulcent, constipating, lactifuge and useful in colic, scabies, gastropathy, diabetes, diarrhea and dysentery. The fruits are used as astringent, refrigerant, stomachachic, antispasmodic, haemostatic and vermifuge. They are useful in griping of bowels, [illegible], colic, diabetes, diarrhea and dysentery. The root juice and fruits are topically applied to cure snake bite. Fruit pods are highly nutritive. The fruit powder mixed along some other herbs and spices is given to new mother as laddoo (Indian sweet dish) in order to cope with post-delivery weakness. The present review will discuss an overview of phytochemical and pharmacological properties, which may help researchers to set their minds for approaching the efficacy and potency of herb.

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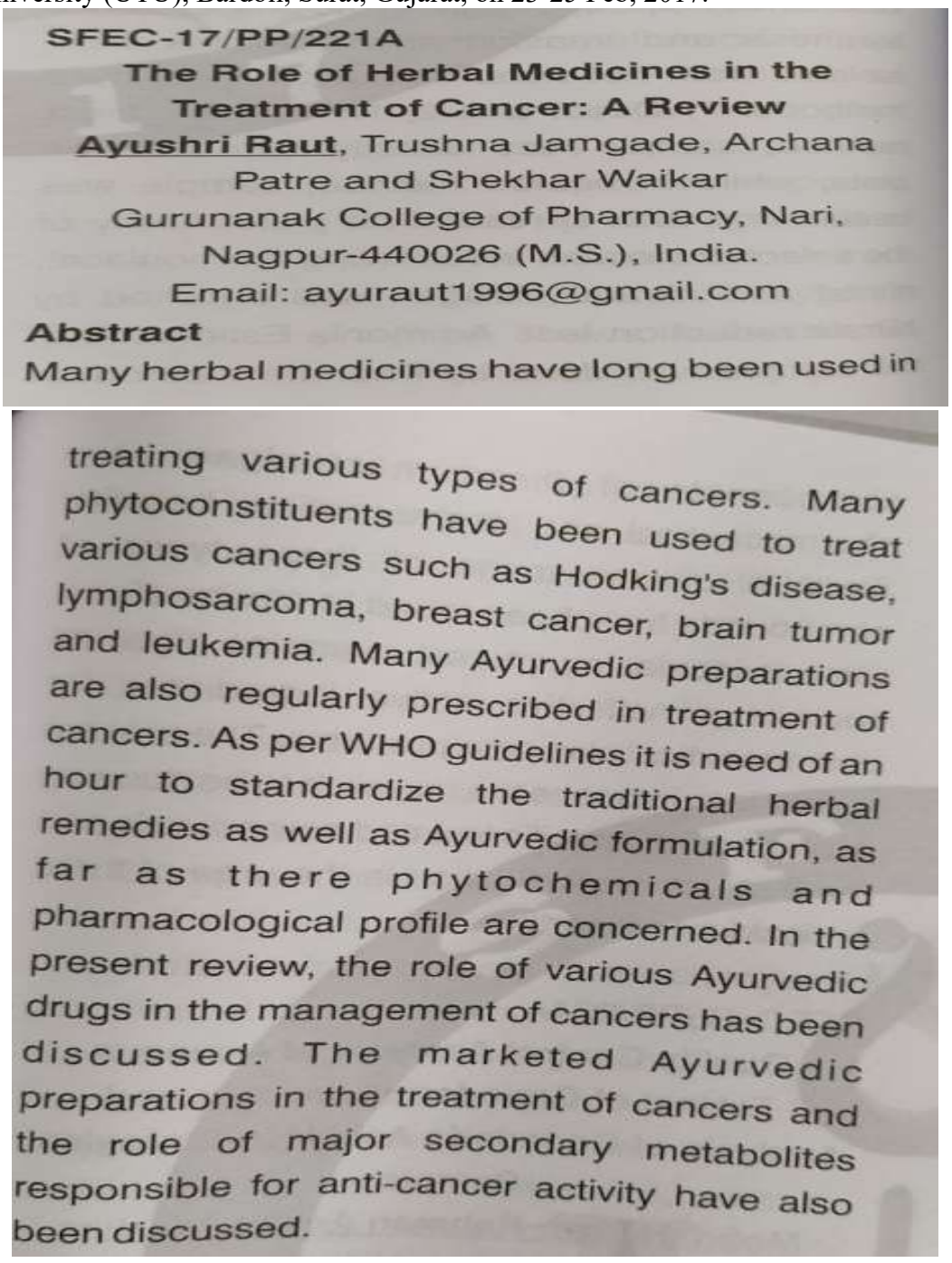
30. Ayushri Raut, Trushna Jamgade, Archana Patre & **Shekhar Waikar** presented paper on The Role of Herbal Medicines in the Treatment of Cancer: A Review in 4th International Congress of the Society for Ethnopharmacology (SFEC) in Uka Tarsadia University (UTU), Bardoli, Surat, Gujarat, on 23-25 Feb, 2017.



SFEC-17/PP/221A

The Role of Herbal Medicines in the Treatment of Cancer: A Review

Ayushri Raut, Trushna Jamgade, Archana Patre and Shekhar Waikar
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Abstract

Many herbal medicines have long been used in treating various types of cancers. Many phytoconstituents have been used to treat various cancers such as Hodking's disease, lymphosarcoma, breast cancer, brain tumor and leukemia. Many Ayurvedic preparations are also regularly prescribed in treatment of cancers. As per WHO guidelines it is need of an hour to standardize the traditional herbal remedies as well as Ayurvedic formulation, as far as there phytochemicals and pharmacological profile are concerned. In the present review, the role of various Ayurvedic drugs in the management of cancers has been discussed. The marketed Ayurvedic preparations in the treatment of cancers and the role of major secondary metabolites responsible for anti-cancer activity have also been discussed.

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31. Kalyani Kale, Bhavana Hirudkar, Rasika Mankar, **Shekhar Waikar** presented paper on Syzygium cumini: A Review in 4th International Congress of the Society for Ethnopharmacology (SFEC) in Uka Tarsadia University (UTU), Bardoli, Surat, Gujarat, on 23-25 Feb, 2017.

SFEC-17/PP/059B

***Syzygium cumini*: A Review**

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Abstract

Syzygium cumini also known as Jambhul in Marathi and Jamun in Hindi. It is an evergreen tropical tree in the flowering plant family Myrtaceae. *Syzygium cumini* is native to the Indian Subcontinent and adjoining regions of Southeast Asia. The species ranges across India, Bangladesh, Pakistan, Nepal, Sri Lanka, Malaysia, the Philippines, and Indonesia. *Syzygium cumini* is a slow growing species. It can reach heights of up to 30 m and can live more than 100 years. *Syzygium cumini* fruit is rich in carbohydrates, minerals such as manganese, zinc, iron, calcium, sodium and potassium and vitamins. The edible pulp contains various phytochemicals like Vitamin C, Vitamin A, riboflavin choline, anthocyanins and various other polyphenols. The plant also contains tannins, flavonoids, essential oil, cynidin glycoside. fruit has long been used for the treatment of diabetes prior to

of shoot and root was significantly higher in the G. *etunicatum*. Per cent relative AM dependency (67.0) and per cent AM colonization in root (70.0) was also maximum in G. *etunicatum* inoculated maize plants. G. *etunicatum* could be multiplied in pot mixture prepared by mixing of sterilized soil, sand and compost in equal proportion. Around 50 spores of G. *etunicatum* were inoculated in individual pot. Plants were grown for 90 days under controlled conditions and watered each day with demineralised water and once a week with Hoagland nutrient solution.

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