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3.5.1. The number of MoUs, collaborations/linkages for Faculty exchange, Student exchange, Internship, Field trip, On-the- job training, research and other academic activities during the last five years

DVV Query

Only functional MoUs/linkages (where at least one activity has been conducted) with institutions/ industries in India and abroad for internship, on-the-job training, project work, student / faculty exchange and collaborative research during the last five years. MoU for waste collection drive, Provide assistance in making SOP, review of papers, Health check-up are not eligible under this Metric. HEI has not attached activities and eligibility of the claim to be rechecked at HEI level. MOU with Suyog Clinical Laboratory, Devrukh MOU with School of Pharmaceutical Sciences, Jaipur National University MOU with ASP College of Arts, commerce and science, Devrukh MOU with Adler Mediequpment Pvt. Ltd. considered.

DVV Response

MoU for waste collection drive, Provide assistance in making SOP, review of papers, Health check-up have been removed. The activities conducted under MOU with Suyog Clinical Laboratory, Devrukh, School of Pharmaceutical Sciences, Jaipur National University, ASP College of Arts, commerce and science, Devrukh and Adler Mediequpment have been included.

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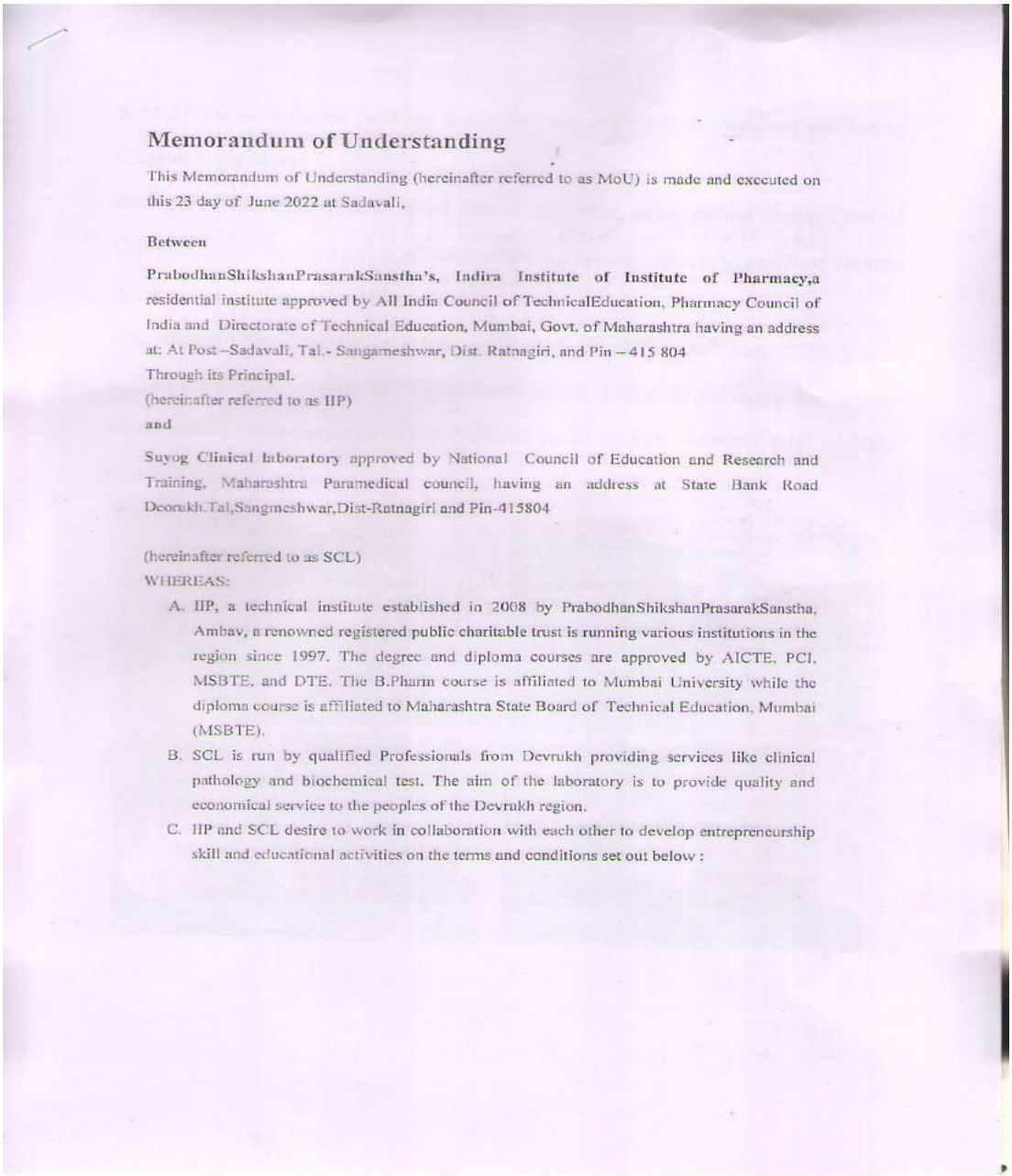

Memorandum of Understanding

This Memorandum of Understanding (hereinafter referred to as MoU) is made and executed on this 23 day of June 2022 at Sadavali,

Between

PrabodhanShikshanPrasarakSanstha's, Indira Institute of Institute of Pharmacy,a residential institute approved by All India Council of TechnicalEducation, Pharmacy Council of India and Directorate of Technical Education, Mumbai, Govt. of Maharashtra having an address at: At Post –Sadavali, Tal.- Sangameshwar, Dist. Ratnagiri, and Pin – 415 804
Through its Principal.
(hereinafter referred to as IIP)
and

Suyog Clinical laboratory approved by National Council of Education and Research and Training, Maharashtra Paramedical council, having an address at State Bank Road Deorukh.Tal,Sangmeshwar,Dist-Ratnagiri and Pin-415804

(hereinafter referred to as SCL)
WHEREAS:

A. IIP, a technical institute established in 2008 by PrabodhanShikshanPrasarakSanstha, Ambav, a renowned registered public charitable trust is running various institutions in the region since 1997. The degree and diploma courses are approved by AICTE, PCI, MSBTE, and DTE. The B.Pharm course is affiliated to Mumbai University while the diploma course is affiliated to Maharashtra State Board of Technical Education, Mumbai (MSBTE).
B. SCL is run by qualified Professionals from Devrukh providing services like clinical pathology and biochemical test. The aim of the laboratory is to provide quality and economical service to the peoples of the Devrukh region.
C. IIP and SCL desire to work in collaboration with each other to develop entrepreneurship skill and educational activities on the terms and conditions set out below :

MOU with Suyog Clinical Laboratory, Devrukh

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A MoU has been signed between Indira institute of Pharmacy Sadavali and Suyog Clinical Laboratory.

As a part Academic syllabus, First year B. pharm students visited Suyog Clinical Laboratory for demonstration of total blood cell count, which is a part of Human Anatomy and Physiology-II Practical.

The student visited the lab in a batch of three from 28th to 30th June 2022. It was indeed a good experience for the students to get a kind of exposure for venous blood collection for actually doing the CBC count on Cell Analyzer with the help of qualified technician.

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Report of guest lecture on 'Analgesic and Steroids'

Date: 11th April and 12th April 2022

Principal and Head of Department of Pharmaceutical Chemsistry Dr. A. B. Khade and IQAC coordinator Mr V. S. Kulkarni have jointly organized guest lecture for final year student on topic Analgesic and Steroids on 11th April and 12th April 2022 through virtual mode. Dr. R. P. Marathe, Principal, Government College of Pharmacy, Ratmagiri, was invited as guest speaker. Program was started with welcome address given by Mr Vivek S Kulkarni.

Dr. R. P. Marathe has given brief information regarding Analgesic and steroids. First day, he has completed the part of Morphine analgesic and on second day he has covered all the aspects of steroids in brief with respect to syllabus of fourth year Pharmaceutical Chemistry III. These session were a very interactive sessions. Some of the students from Shivajirao S. Jondhle College of Pharmacy, Shahapur, Asangaon have also joined the sessions and took the benefit of excellent sessions.

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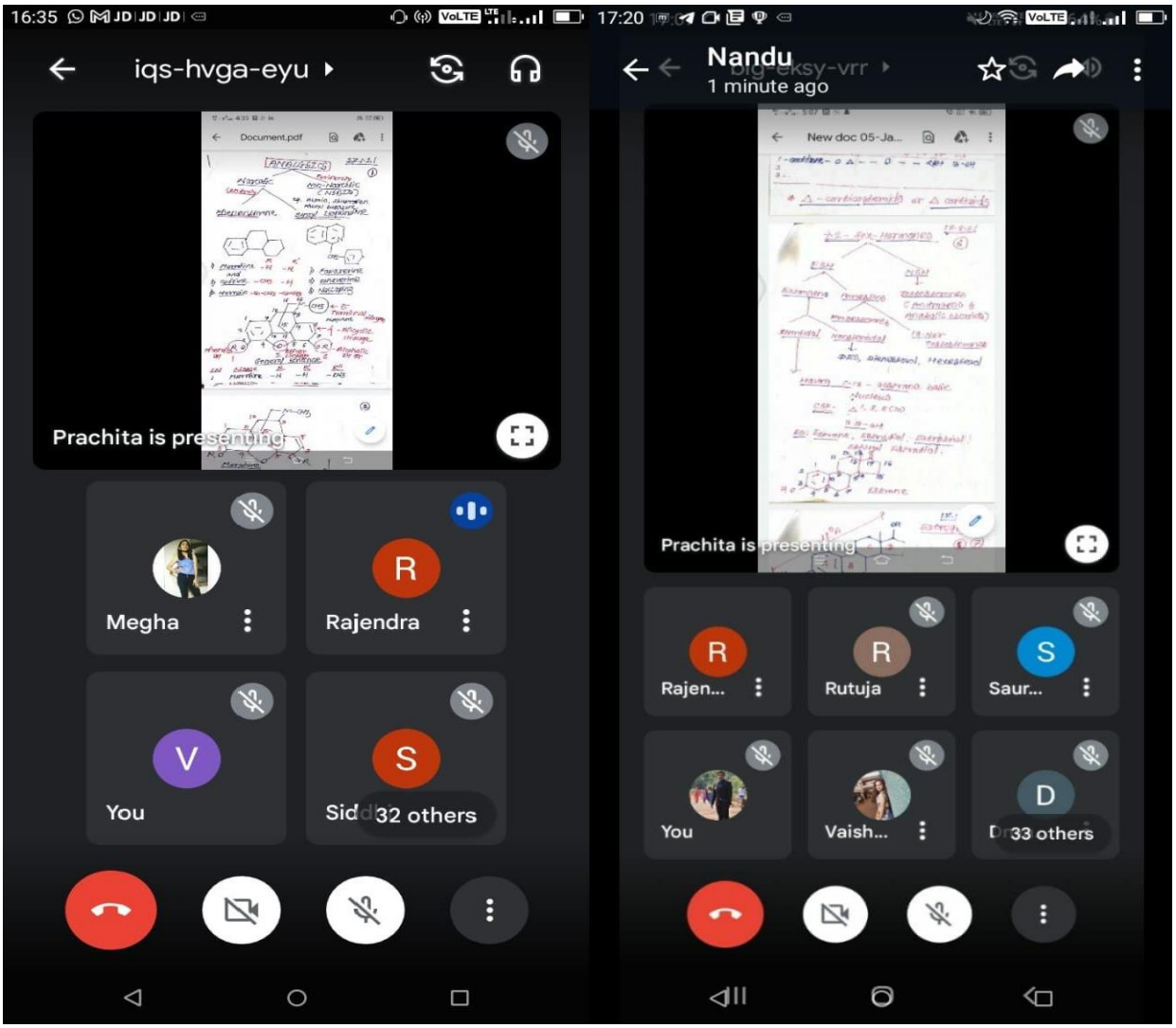
Event photographs



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MEMORANDUM OF UNDERSTANDING (MOU)
BETWEEN
JAIPUR NATIONAL UNIVERSITY, JAIPUR
AND
INDIRA INSTITUTE OF PHARMACY, SADAVALI (DEVRUKH)

This MOU is entered on the Saturday of 08/06/2019 by and between Jaipur National University, Jaipur (herein after called as JNU) situated at Jagatpura, Jaipur Rajasthan, the University established by State under section (2f) of the Act of UGC.

and

Indira Institute of Pharmacy, Sadavali, Devrukh (herein after called as IIP) Tal: Sangameshwar, Dist: Ratnagiri, Maharashtra. 415804. Affiliated to University of Mumbai, Approved by AICTE, PCI, New Delhi, Recognized by DTE, Govt. of Maharashtra.

The aforesaid Institutions are hereinafter referred as JNU and IIP

1. **Objectives of the MOU**
   - i. To promote and enhance academic interest between JNU and IIP.
   - ii. To exchange the faculty and/or staff between both Institutes/Universities.
   - iii. To conduct joint research activities including joint research publications.
   - iv. To participate in seminars and other related academic meetings/activities.
   - v. To exchange research students including UG/PG student, between both.
   - vi. To exchange academic and research materials.
2. **Technical Areas of Collaboration:**
   - i. A continuing Quality Improvement Programme of Research in the field of mutual interest between both parties.
   - ii. Provide special academic interactive lectures by faculty of both Institutions.
   - iii. Provide necessary help and guidance in organization of Workshops/ Conferences/ Personality Development Programme for enhancement of skills of students and faculties of both Institutions.
   - iv. Provide necessary support for lectures through video conferences, satellite links and assistance in development of E-classes, establishment of research labs, training and placements at both Institutes.
   - v. Joint conduct and supervision of research students including UG/PG students at either Institutes.
   - vi. Facilitate training for teachers and students.

MOU with Jaipur National University, Jaipur

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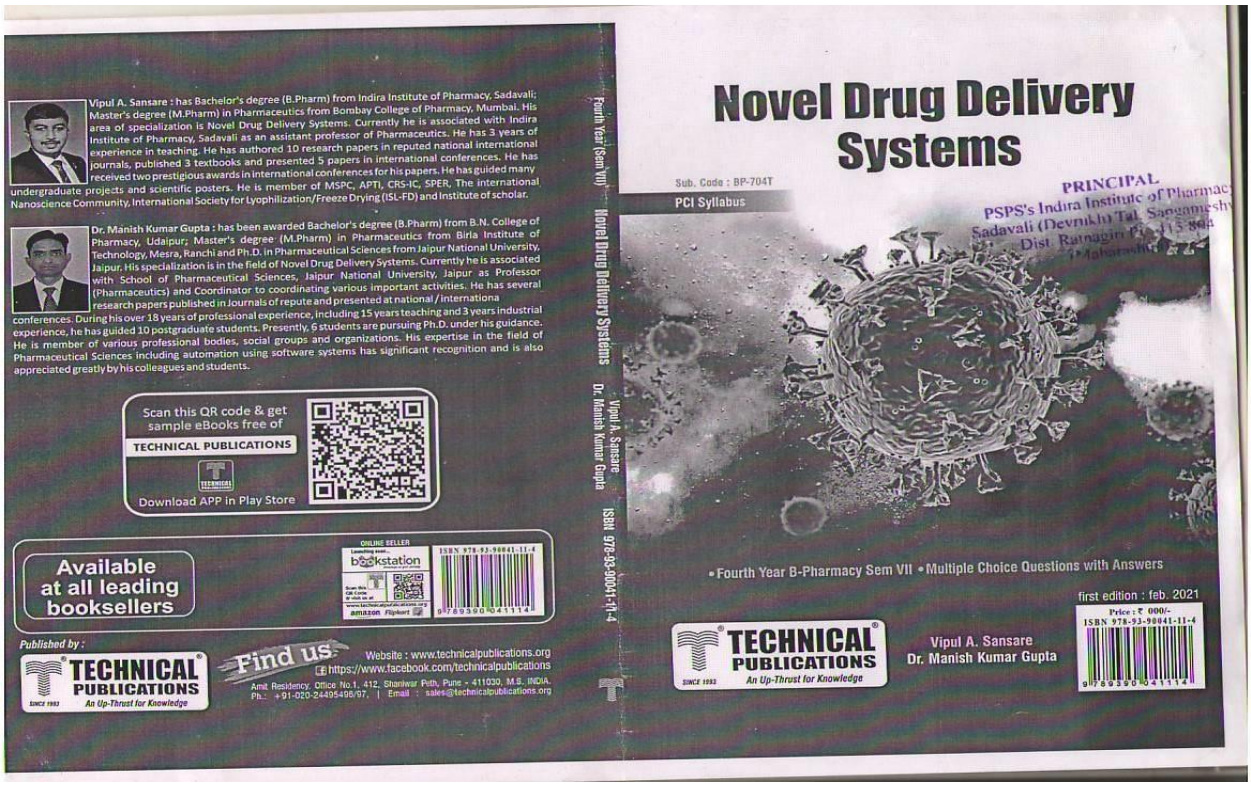

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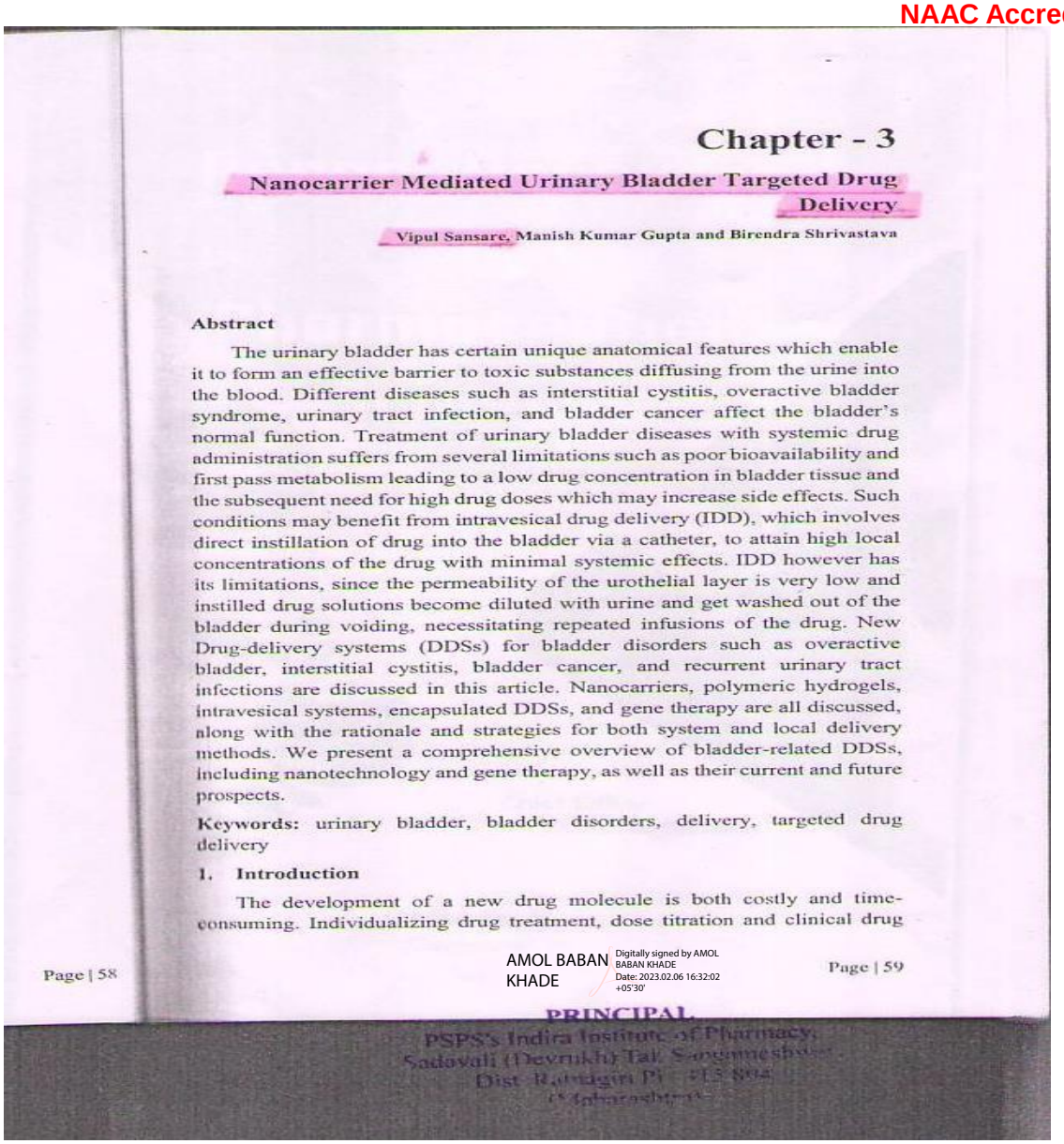

Chapter - 3

Nanocarrier Mediated Urinary Bladder Targeted Drug Delivery

Vipul Sansare, Manish Kumar Gupta and Birendra Shrivastava

Abstract

The urinary bladder has certain unique anatomical features which enable it to form an effective barrier to toxic substances diffusing from the urine into the blood. Different diseases such as interstitial cystitis, overactive bladder syndrome, urinary tract infection, and bladder cancer affect the bladder's normal function. Treatment of urinary bladder diseases with systemic drug administration suffers from several limitations such as poor bioavailability and first pass metabolism leading to a low drug concentration in bladder tissue and the subsequent need for high drug doses which may increase side effects. Such conditions may benefit from intravesical drug delivery (IDD), which involves direct instillation of drug into the bladder via a catheter, to attain high local concentrations of the drug with minimal systemic effects. IDD however has its limitations, since the permeability of the urothelial layer is very low and instilled drug solutions become diluted with urine and get washed out of the bladder during voiding, necessitating repeated infusions of the drug. New Drug-delivery systems (DDSs) for bladder disorders such as overactive bladder, interstitial cystitis, bladder cancer, and recurrent urinary tract infections are discussed in this article. Nanocarriers, polymeric hydrogels, intravesical systems, encapsulated DDSs, and gene therapy are all discussed, along with the rationale and strategies for both system and local delivery methods. We present a comprehensive overview of bladder-related DDSs, including nanotechnology and gene therapy, as well as their current and future prospects.

Keywords: urinary bladder, bladder disorders, delivery, targeted drug delivery

1. Introduction

The development of a new drug molecule is both costly and time-consuming. Individualizing drug treatment, dose titration and clinical drug

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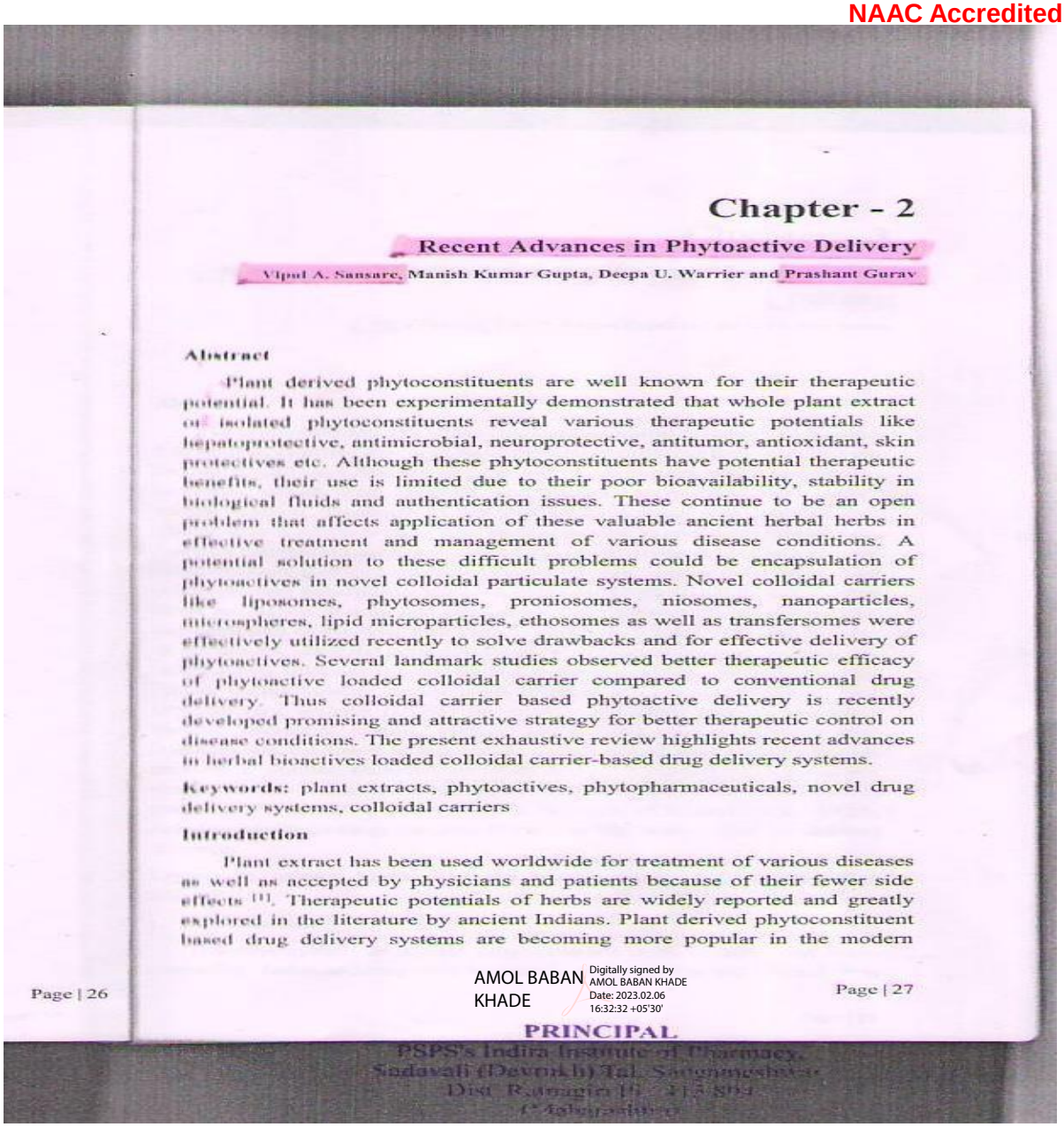

Chapter - 2

Recent Advances in Phytoactive Delivery

Vipul A. Sansare, Manish Kumar Gupta, Deepa U. Warrier and Prashant Gurav

Abstract

Plant derived phytoconstituents are well known for their therapeutic potential. It has been experimentally demonstrated that whole plant extract or isolated phytoconstituents reveal various therapeutic potentials like hepatoprotective, antimicrobial, neuroprotective, antitumor, antioxidant, skin protectives etc. Although these phytoconstituents have potential therapeutic benefits, their use is limited due to their poor bioavailability, stability in biological fluids and authentication issues. These continue to be an open problem that affects application of these valuable ancient herbal herbs in effective treatment and management of various disease conditions. A potential solution to these difficult problems could be encapsulation of phytoactives in novel colloidal particulate systems. Novel colloidal carriers like liposomes, phytosomes, proniosomes, niosomes, nanoparticles, microspheres, lipid microparticles, ethosomes as well as transfersomes were effectively utilized recently to solve drawbacks and for effective delivery of phytoactives. Several landmark studies observed better therapeutic efficacy of phytoactive loaded colloidal carrier compared to conventional drug delivery. Thus colloidal carrier based phytoactive delivery is recently developed promising and attractive strategy for better therapeutic control on disease conditions. The present exhaustive review highlights recent advances in herbal bioactives loaded colloidal carrier-based drug delivery systems.

Keywords: plant extracts, phytoactives, phytopharmaceuticals, novel drug delivery systems, colloidal carriers

Introduction

Plant extract has been used worldwide for treatment of various diseases as well as accepted by physicians and patients because of their fewer side effects [1]. Therapeutic potentials of herbs are widely reported and greatly explored in the literature by ancient Indians. Plant derived phytoconstituent based drug delivery systems are becoming more popular in the modern

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CHAPTER 1

World Health Organization Proclaimed Global Crisis: An overview of the 2019 new Coronavirus (COVID-19) Outbreak

Manish Kumar Gupta[1], Ketaki Dhane[2]*, Hemant Chikhale[3], Amol khade[4], Abhinandan Patil[5]

[1,2] School of Pharmaceutical Sciences, Jaipur National University, Jaipur
[3]Gokhale Education Society's, Sir Dr. M. S. Gosavi College of Pharmaceutical Education and Research,
[4]PSPS, Indira Institute of Pharmacy, Sadavali, India
[5]School of Pharmaceutical Sciences, Sanjay Ghodawat University, Kolhapur, India
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Abstract

A novel coronavirus, COVID-19, was identified as the pathogenic agent (WHO). The pandemic of severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS)-related coronavirus disease 2019 (COVID-19) is sweeping the world. A strange outbreak of pneumonia with no known cause occurred in Wuhan City, Hubei Province, China, in December 2019. The virus was discovered in bats in Wuhan, China, and then transferred to humans via an unknown intermediary species. COVID-19 has not yet been successfully treated with a clinically approved antiviral or vaccine. Only a few broad-spectrum antiviral drugs have been studied in clinical trials against COVID-19, and only a few have proven to be successful. The global emergence and pathogenicity of COVID-19 infection are summarized and compared in this paper.

Keywords: COVID-19, Corona virus, SARS, MERS, Pneumonia

Introduction

Coronavirus is a significant infection that mostly affects the respiratory system of humans. Previous corona virus (CoV) outbreaks include the severe acute respiratory syndrome (SARS)-CoV and the Middle East respiratory syndrome (MERS)-CoV, both of which have been labelled as major public health threats. A group of people was hospitalized to hospitals in late December 2019 with an initial diagnosis of pneumonia

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JOURNAL OF LIPOSOME RESEARCH
https://doi.org/10.1080/08982104.2021.1968430

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REVIEW ARTICLE

Comprehensive review on use of phospholipid based vesicles for phytoactive delivery

Manish Kumar Gupta[a], Vipul Sansare[a], Birendra Shrivastava[a], Santosh Jadhav[b] and Prashant Gurav[c]

[a]School of Pharmaceutical Sciences, Jaipur National University, Jaipur, India; [b]Department of Pharmaceutical Chemistry, SVPM'S College of Pharmacy, Malegaon, India; [c]Department of Pharmaceutics, Indira Institute of Pharmacy, Sadavali, India

ABSTRACT

Plant-derived phytoconstituents are well known for their therapeutic potential. It has been experimentally demonstrated that whole-plant extract or isolated phytoconstituents reveal various therapeutic potentials like hepatoprotective, antimicrobial, neuroprotective, antitumor, antioxidant, skin protectives, etc. Although these phytoconstituents have potential therapeutic benefits, their use is limited due to their poor bioavailability, stability in biological fluids, and authentication issues. These continue to be an open problem that affects the application of these valuable ancient herbal herbs in the effective treatment and management of various disease conditions. A potential solution to these difficult problems could be the loading of phytoactives in phospholipid-based vesicular systems. Phospholipid-based vesicles like liposomes, phytosomes, ethosomes as well as transfersomes were effectively utilized recently to solve drawbacks and for effective delivery of phytoactives. Several landmark studies observed better therapeutic efficacy of phytoactive loaded vesicles compared to conventional drug delivery. Thus phospholipid-based vesicles mediated phytoactive delivery is a recently developed promising and attractive strategy for better therapeutic control on disease conditions. The present short review highlights recent advances in herbal bioactive loaded phospholipid-based vesicles.

ARTICLE HISTORY
Received 7 April 2021
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KEYWORDS
Plant extracts; phytopharmaceuticals; herbal novel drug delivery systems; phospholipid vesicles; nanotechnology

1. Introduction

Plant extract or isolated therapeutically active phytoconstituents have long been used worldwide for the treatment of various diseases as well as accepted by physicians and patients because of their fewer side effects (Musthaba *et al.* 2009). The therapeutic efficacy of herbs is widely reported and extensively explored in the literature by ancient Indians. Plant-derived phytoactives based drug delivery systems (DDSs) are becoming more popular in the modern world for treating various diseases with lesser toxic impressions and better therapeutic potential. Modern herbal medicines are developed based on traditional ayurvedic knowledge regarding the therapeutic potentials of phytoactives. Nearly, 50% of modern herbal medicines are developed using isolated active phytoconstituents from various parts of herbs. In addition to this, most of the novel therapeutic molecules discover nowadays are developed using plant-based lead molecules (Chanchal *et al.* 2008). However therapeutic effects of some herb-based products are limited due to various constraints like limited solubility as well as stability in the gastrointestinal tract (GIT), poor absorption across GIT linings, considerable first-pass metabolism, and limited oral bioavailability. These issues are well documented in the scientific literature. In order to tackle limitations associated with conventional herb-based products, various scientific experts have utilized nanotechnology-based approaches (Goyal *et al.* 2011).

Nanotechnology is an interdisciplinary area of research and development associated with the production, processing, and utilization of materials having a nanometer size range (Patra *et al.* 2018). Furthermore, nanotechnology in the herbal drug domain has been investigated to improve the bioavailability of phytoconstituents. In recent decades, noble attention has been paid to the use of nanotechnology-based looms for the development of herbal novel drug delivery systems (NDDS) (Wang *et al.* 2013). Clear, strong, and well-documented evidence supports the concept of herbal actives loaded NDDS (Wang *et al.* 2014). Extensive research and investigations in the field of herbal NDDS came up with successful designs of herbal actives encapsulated NDDS (Devi *et al.* 2010). Numerous phospholipid based vesicles like liposomes, phytosomes, ethosomes (Abdulbaqi *et al.* 2016), transfersomes glycerosomes (Manconi *et al.* 2018), santosomes (Apolinário *et al.* 2021), glycethosomes (Pleguezuelos-villa *et al.* 2020) and hyalurosomes (Manca *et al.* 2019) were successfully utilized for effective delivery of plant extracts/isolated phytoconstituents (Bonifácio *et al.* 2014).

The use of colloidal carriers is considered a promising strategy because they offer various advantages like enhance solubility, stability, bioavailability as well as pharmacology activity, and controlled release kinetic of herbal actives (Yan *et al.* 2020).

Additionally, it is feasible to alter features of colloidal carriers like composition (polymer, lipid, phospholipid, non-ionic

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Nanomed Res J 6(4):347-351, Autumn 2021

RESEARCH ARTICLE

Design and evaluation of sesamol loaded hyaluronic acid functionalized phospholipid nanovesicles: DPPH radical scavenging potential assay

Manish Kumar Gupta[1], Vipul Sansare[1*], Birendra Shrivastava[1], Santosh Jadhav[2], Prashant Gurav[3]

[1] School of Pharmaceutical Sciences, Jaipur National University, Jaipur, India- 302017.
[2] Department of Pharmaceutical Chemistry, SVPM's College of Pharmacy, Malegaon, Maharashtra, India- 413115.
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ABSTRACT

Objective(s): The unfavorable physicochemical properties of well recognized antioxidant phytoactive sesamol limits its oral bioavailability as well as potential application as an antioxidant drug. The aim of the study is to design and evaluate sesamol encapsulated hyaluronic acid anchored phospholipid nanovesicles to enhance its antioxidant potential.

Methods: Drug encapsulated hyalurosomes were prepared using thin film hydration method and evaluated for particle diameter, physical stability, drug encapsulation efficiency, sesamol release behavior in vitro and DPPH radical scavenging assay.

Results: The selected method was found to be effective for fabrication of phospholipid nanovesicles with particle diameter 200 ± 10.173 nm and zeta potential -29.8 ± 4.16 mV. The drug loaded hyalurosomes revealed significantly better radical scavenging potential compared to free sesamol and unloaded hyalurosomes.

Conclusions: Hyaluronic acid functionalized phospholipid nanovesicles is novel phospholipid based carrier for delivery of phytoactives. Thus formulated phospholipid based system could be acceptable system for delivery sesamol with improved antioxidant potential.

How to cite this article
Kumar Gupta M., Sansare V., Shrivastava B., Jadhav S., Gurav P. Design and evaluation of sesamol loaded hyaluronic acid functionalized phospholipid nanovesicles: DPPH radical scavenging potential assay. Nanomed Res J, 2021; 6(4): 347-351. DOI: 10.22034/nmrj.2021.04.004

INTRODUCTION

The poor gastrointestinal bioavailability and significant metabolism via conjugation are major hurdles in oral delivery of plant based antioxidant phytoactive sesamol (SM). SM is phenolic chemical constituent isolated from sesame oil [1]. Chemically SM is [3, 4-methylenedioxyphenol]. Various landmark studies have proved liver protective and antioxidant activities of SM [2]. The solubility of SM in polar solvents is good. In addition to this, the lipophilicity of SM is also good [3]. To solve drawbacks of SM and to enhance oral bioavailability, it need to formulate novel drug delivery system, which can release encapsulated drug in controlled manner and possibly improve drug circulation in the body.

Colloidal nanocarriers are promising nanosized particles for delivery of phytoactive [4]. novel nanovesicles like liposomes [5, 6], ethosomes [7, 8], transfersomes [9, 10], glycerosomes [11], glycethosomes [12] and hyalurosomes [13] have been investigated phytoactive delivery [14].

Hyalurosomes are phospholipid novel nanovesicles designed using phospholipid and natural polymer i.e. hyaluronic acid [15]. These

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ORIGINAL ARTICLE

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Development and Evaluation of Topical Polyherbal Formulations for their Antimicrobial Potential

Manish Kumar Gupta[1], Sujit Nagare*[1], Birendra Shrivastava[1], Supriya Hyam[2], Ketaki Dhane[3]

[1]School of Pharmaceutical Sciences, Jaipur National University, Jaipur, Rajasthan, India
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Keywords:

Antimicrobial activity, polyherbal formulations, extracts

ABSTRACT

The different types of skin diseases caused due to microorganisms. In recent years the use of the traditional medicinal system was increased because of more minor side effects and cost effective. The single herbal drugs were found to be less potent, which can be improved by utilizing more than one herb in the single formulation, known as polyherbal formulation. The present work involved the development and evaluation of the different polyherbal formulations (cream, gel, and emulgel) using natural ingredients. The aim of the present work is to produce a formulation with improved antimicrobial potency and stability of formulations when compared with the individual extracts of herbal drugs. All the prepared formulations were tested against various microbial strains and concluded that the polyherbal formulations (C25, G1, EG1) were found potent against most selected strains. The prepared formulations can be used as a multipurpose formulation.

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INTRODUCTION

Microorganisms are the causative agents of almost all acute and chronic diseases. Dermatologic diseases are the fourth most common cause of all human illnesses. Skin disorders cause higher year loss due to disability than other diseases such as diabetes mellitus. There are around 3000 different types of skin disorders. Intensity and symptoms of infections that are self-limiting and benign tumors, chronic inflammatory disorders, and malignant neoplasms are all examples of diseases that cause considerable morbidity and have a negative impact on quality of life. Antibiotics (which kill microorganisms or stop the growth of microorganisms) are the medicines used to treat different infections. Still, they may build resistance due to longer use and becomes less effective. It may produce a severe allergic reaction. It causes diarrhea, abdominal pain, vomiting, and nausea. It also kills the healthy bacteria in the body. To minimize all these drawbacks, herbal medicine has been commonly used for the treatment and prevention of diseases and health promotion, as well as for enhancement of the span and quality of life.

In many developing societies, traditional medicine, of which herbal medicine is a core part, is the only system of health care available or affordable. However, there is a lack of a systematic approach to assessing their safety and effectiveness. The holistic approach to health care makes herbal medicine very attractive to many people, but it also makes scientific evaluation challenging because many factors must be considered. Herbal medicines are in widespread use and although many believe herbal

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Preparation and Evaluation of Topical Polyherbal Emulgel Formulation for its Wound Healing Potential

Manish Kumar Gupta[1], Sujit Nagare*[1], Birendra Shrivastava[1], Supriya Hyam[2], Ketaki Dhane[3]

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Wound Healing Activity,
Burnt Wound,
Skin Polyherbal Formulations,
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ABSTRACT

Physical harm that causes the skin to break or open up are known as wounds. For the repair of broken anatomical continuity and compromised functional status of the skin, proper wound healing is crucial. It is the end result of a coordinated response to harm from various cell types. The contraction and closure of the wound as well as the restoration of a functional barrier are the consequences of the intricate, multifactorial process known as wound healing. Due to its lower risk of side effects and lower cost, traditional medicine has seen increased use in recent years. When more than one herb is included in a single formulation, this is known as a polyherbal formulation, and the potency of the single herbal medications is increased. The purpose of the current study was to assess an emulgel made of developed polyherbal ingredients against wound healing. The current study aims to assess the created formulation's ability to treat burns and excision wounds in terms of wound healing potential. Excise and burn wounds largely recovered. A group of rats given the medication showed signs of re-epithelialization of cells in newly formed tissue. At the healing site, there was also evidence of fibroblastic and vascular procreation. Without the presence of any microorganisms, the formulation effectively increases the rate of epithelialization and collagen viability across the wound region. According to the findings, the produced formulation (EG1) was superior to the extract in terms of effectiveness for wound healing.

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INTRODUCTION

Physical harm that causes the skin to split or open up are called wounds. For the repair of broken anatomical continuity and compromised functional status of the skin, proper wound healing is crucial. It is the end result of a coordinated response to harm from various cell types. The contraction and closure of the wound as well as the restoration of a functional barrier are the consequences of the multifaceted, complex process of wound healing (Umachigi *et al.*, 2007b). A series of actions, including inflammation, cell proliferation, and cell type migration, result in the repair of damaged tissues (Sidhu *et al.*, 1999). The physiologic process of wound healing is divided into three phases: the substrate phase, the proliferative phase, and the remodeling phase (Umachigi *et al.*, 2007a). A number of cytokines, including growth factors, govern how all these actions are carried out (Pierce *et al.*, 1991). Herbal medicine is a crucial component of traditional medicine, which is

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UNI-Directional Double Run Multi-Marker Based Standardization of "Amruthothram" Ayurvedic Medicine by HPTLC

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Keywords:

Amruthotharam, standardization, UDDD- HPTLC, Ayurveda

ABSTRACT

Ayurveda and Unani Medicine are the most classy and commonly practiced systems in India. In India's AYUSH systems, some 8,000 herbal remedies have been codified. Amruthotharam/Amrutottaram Kashayam is one of such preparation which takes care of metabolic disorders through inflammation. The formulation contains guduchi (*Tinospora cordifolia*), haritaki (*Terminalia chebula*), and shunthi (Zingiber officinale) in the ratio 6:4:2. Natural remedies obtained from wild sources; therefore, sustaining consistent product quality is difficult because of extrinsic variables including soil conditions, light and water availability, temperature changes, nutrients, and geographic location. The present work aimed to develop and validate uni-dimensional double development high-performance thin layer chromatography to standardize the marker-based compounds such as gallic acid, berberine and gingerol-6, because the power of one-dimensional chromatography is often inadequate for complete resolution of the components present in complex samples which can be improved by separating actives through UDDD.

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INTRODUCTION

The term Traditional herbal medicine is a knowledge, skills, and practices relies on indigenous concepts, beliefs, as well as experiences used to maintain health also to prevent, diagnose, improve or cure physical as well as mental illness (World Health Organization, http://www.who.int/topics/traditional medicine/en/). Traditional medicine is divided into many diverse systems, each having its own philosophy and practices inspired by the geographic place as well as environmental conditions in which it first developed (WHO, 2005). Though, a prevalent concept is a holistic approach to life, which emphasizes the body, mind, also environment, as well as a focus on health rather than sickness (WHO 2005). Herb comes from the Latin word "herba" and the old French word "herbe." Together, these two words form the modern English word "herb." Today, the term "herb" can be used to refer to any part of a plant, such as the seed, flower, fruit, stem, leaf, bark, stigma, or root, also the plants that are not woody. According to the evidence, Unani Hakims, Indian Vaids, cultures from Europe and the Mediterranean, and cultures from the rest of the world have all employed plants as medicine for more than 4000 years. Indigenous communities in Rome, Egypt, Iran, Africa, and America practised healing rituals that involved the use of herbs. Other indigenous communities developed traditional medical practises, such as Unani, Ayurveda, and Chinese

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Evaluation of the Impact of the Ayurvedic Formulation "Amruthotharam" on Obesity-Related Diabetic and Hepatic Disorders

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Amruthotharam, anti-diabetic potential, traditional method, herbal formulation

ABSTRACT

Diabetes mellitus (DM) is a non-communicable disease that affects people all over the world and is defined by ongoing hyperglycemia. Sulfonylureas, biguanides, -glucosidase inhibitors, and non-sulfonylurea secretagogues are a few oral hypoglycemic medications that are frequently recommended by doctors for managing diabetes. Oral hypoglycemic medication use causes noticeable negative effects, and there is currently no permanent viable treatment for DM recovery. Complementary and alternative therapies must be used to lower the incidence of disease until better medical methods are discovered. The search for an efficient medication, either by itself or in combination, to treat diabetes continues to be fruitless. This might have a viable replacement in the shape of herbal preparations, which are widely employed in conventional medical systems. In order to determine the impact of Amruthotharam kashaya prepared using a traditional method for a four-week treatment period on blood glucose levels as well as other biochemical parameters like total cholesterol, LDL, HDL, and VLDL in HFD-alloxan-induced diabetic rats, the present study was designed. Significant weight loss was also seen with diabetes management, and this was partially reversed after formulation administration. The formulation significantly decreased increased levels of a few particular biochemical markers and avoided other hyperglycemia-related complications. These findings offer scientific support for the anti-diabetic usage of a conventional formulation and imply that the administration of the formulation to rats can be used safely by humans because it lowers the levels of several biochemical factors that contribute to diabetes.

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INTRODUCTION

Diabetes is a metabolic condition that manifests as frequent urination, thirst, and hunger in addition to high or above-normal blood glucose levels (70–110 mg/dL). The main causes are either decreased insulin synthesis by -cells or diminished insulin sensitivity in cells. (Singab *et al.*, 2014) Diabetes raises the chance of obesity, heredity, ageing, hereditary insulin receptor and beta-cell function alterations, medication and infection abuse, and other cofactors. Type 1 diabetes, type 2 diabetes, and type 3 diabetes are the three forms of diabetes according to pathological reasons.

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A review on metabolic syndrome

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Abstract---Metabolic syndrome is considered a major reason for the emergence of chronic dreadful diseases. Obesity and wrong food habit are key factors for metabolic syndrome. Globally people are affected by glucose intolerance, central obesity, hypertension, and dyslipidemia. Diabetes is a major part of metabolic syndrome. Targeted anti-inflammatory therapy has been suggested for both prevention and treatment of many of the above-said syndrome especially diabetes. Diet is an important regulatory factor in the immune response. There is considerable evidence to suggest that malnutrition leads to immune suppression due to a susceptibility to infection. On the other hand, over-nutrition leads to immune activation due to a susceptibility to an inflammatory condition. Inflammation may have an important role in the development and progression of diabetes and its complications; however, the impact of experimental anti-inflammatory treatments on diabetes deterioration over time and cardiovascular outcomes is still elusive. Thus proper diet with some drug therapy not only resolves the issue but can prevent the progression of the disease at extreme levels.

Keywords---metabolic syndrome, obesity, inflammation, diabetes, diet.

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Fabrication and evaluation of mannose decorated curcumin loaded nanostructured lipid carriers for hepatocyte targeting: *In vivo* hepatoprotective activity in Wistar rats

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ABSTRACT

Curcumin is a well-recognized antioxidant phytoactive isolated from the rhizomes of *Curcuma longa*. Numerous landmark investigations have proved the antioxidant and hepatoprotective potential of curcumin. The aim of present study was to target curcumin loaded nanocarriers to hepatocytes using asialoglycoprotein receptors targeting strategy. Mannose, a water-soluble carbohydrate, was hydrophobized by anchoring stearylamine with an objective to conjugate mannose on the surface of curcumin loaded nanostructured lipid carriers for targeting asialoglycoprotein receptors on hepatocytes. Mannose conjugated stearylamine was synthesized and characterized using various analytical techniques. The synthesized targeting ligand was incorporated curcumin loaded nanostructured lipid carriers and characterized by photon correlation spectroscopy. Zeta potential measurement was used to confirm the conjugation of the synthesized ligand to the surface of drug-loaded nanostructured lipid carriers. CCl_4 induced hepatotoxicity in male Wistar rats was used as an experimental animal model to evaluate the hepatoprotective potential of formulated drug encapsulated nanostructured lipid carriers. The hepatoprotective potential was assessed by measuring serum liver injury markers and oxidative stress parameters in the liver post-mitochondrial supernatant. Mannose conjugated nanostructured lipid carriers showed acceptable particle size which revealed its suitability for hepatocyte targeting. In addition to this, mannose conjugated nanocarriers revealed significantly better ($p < 0.05$) reduction of serum liver injury markers and proinflammatory cytokines compared to the unconjugated one which confirmed hepatocytes targeting potential of the synthesized ligand. Asialoglycoprotein receptors targeting could be a landmark strategy for hepatocyte targeting. Thus, the synthesized mannose anchored stearylamine could be a promising novel targeting ligand having hepatocyte targeting potential.

1. Introduction

Liver is a complex and specialized organ which regulates numerous biochemical functions like synthesis and metabolism of a number of complex molecules. Various liver diseases affect millions of people worldwide, which are difficult to treat with conventional drug delivery (Bartneck et al., 2014). World Health Organization has reported 30–50% of liver cirrhosis globally due to alcohol consumption and more than 300 million cases of chronic hepatitis infections in 2020 (Vasanthkumar et al., 2017). Numerous drugs have been investigated for the treatment of diseases associated with liver, however a correct drug delivery system needs to be find for the delivery of drugs.

Majority of conventionally administered drugs are accumulated in the liver, however, the efficient therapeutic effect in diseases like hepatocellular carcinoma, hepatitis, liver cirrhosis and hepatic tuberculosis is not achieved. To overcome the limitations associated with conventional drug delivery, novel colloidal carriers like liposomes (Castangia et al., 2015; Shah et al., 2013; Tang and Ge, 2017), nanoparticles (NPs) (Guhagarkar et al., 2015; Raposo et al., 2020), solid lipid nanoparticles (SLNs) (Bonferoni et al., 2018; Kakkar and Kaur, 2012; Mohanalakshmi

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MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding (hereinafter referred to as the "MOU") is made and executed on this 6th day of March, 2017 at Devrukh.

BETWEEN

Devrukh Shikshan Prasarak Mandal's Nya. Tatyasaheb Athalye Arts, Ved. S. R. Sapre Commerce and Dadasaheb Pitre Science College, Devrukh, a college recognized under Section 2(f) and 12 (B) of the UGC Act 1956 and having address at: At Post Devrukh, Tal. Sangmeshwar, Dist. Ratnagiri, Pin 415 804

Through its- Principal

(Hereinafter referred to as "ASPCD")

AND

Prabodhan Shikshan Prasarak Sanstha's Indira Institute of Pharmacy a residential Institute approved by All India Council for Technical Education, PCI New Delhi and having address at: At Post Sadavali, Tal. Sangmeshwar, Dist. Ratnagiri, Pin 415 804

Through its- Principal

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MOU with ASP College of Arts, commerce and science, Devrukh

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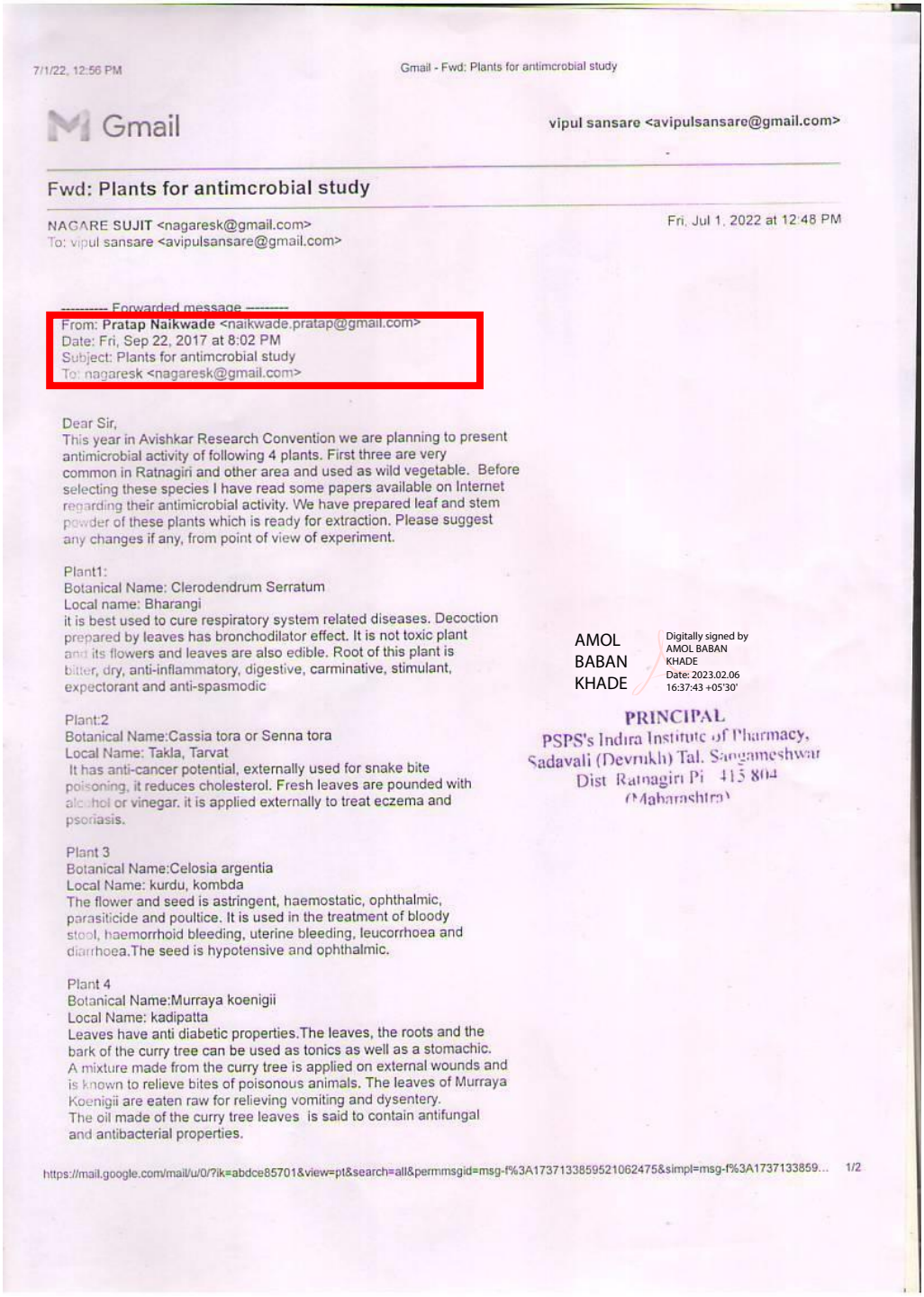

7/1/22, 12:56 PM Gmail - Fwd: Plants for antimcrobial study

Gmail vipul sansare <avipulsansare@gmail.com>

Fwd: Plants for antimcrobial study

NAGARE SUJIT <nagaresk@gmail.com> Fri, Jul 1, 2022 at 12:48 PM
To: vipul sansare <avipulsansare@gmail.com>

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From: **Pratap Naikwade** <naikwade.pratap@gmail.com>
Date: Fri, Sep 22, 2017 at 8:02 PM
Subject: Plants for antimcrobial study
To: nagaresk <nagaresk@gmail.com>

Dear Sir,
This year in Avishkar Research Convention we are planning to present antimicrobial activity of following 4 plants. First three are very common in Ratnagiri and other area and used as wild vegetable. Before selecting these species I have read some papers available on Internet regarding their antimicrobial activity. We have prepared leaf and stem powder of these plants which is ready for extraction. Please suggest any changes if any, from point of view of experiment.

Plant1:
Botanical Name: Clerodendrum Serratum
Local name: Bharangi
it is best used to cure respiratory system related diseases. Decoction prepared by leaves has bronchodilator effect. It is not toxic plant and its flowers and leaves are also edible. Root of this plant is bitter, dry, anti-inflammatory, digestive, carminative, stimulant, expectorant and anti-spasmodic

Plant:2
Botanical Name:Cassia tora or Senna tora
Local Name: Takla, Tarvat
It has anti-cancer potential, externally used for snake bite poisoning, it reduces cholesterol. Fresh leaves are pounded with alcohol or vinegar. it is applied externally to treat eczema and psoriasis.

Plant 3
Botanical Name:Celosia argentia
Local Name: kurdu, kombda
The flower and seed is astringent, haemostatic, ophthalmic, parasiticide and poultice. It is used in the treatment of bloody stool, haemorrhoid bleeding, uterine bleeding, leucorrhoea and diarrhoea.The seed is hypotensive and ophthalmic.

Plant 4
Botanical Name:Murraya koenigii
Local Name: kadipatta
Leaves have anti diabetic properties.The leaves, the roots and the bark of the curry tree can be used as tonics as well as a stomachic. A mixture made from the curry tree is applied on external wounds and is known to relieve bites of poisonous animals. The leaves of Murraya Koenigii are eaten raw for relieving vomiting and dysentery. The oil made of the curry tree leaves is said to contain antifungal and antibacterial properties.

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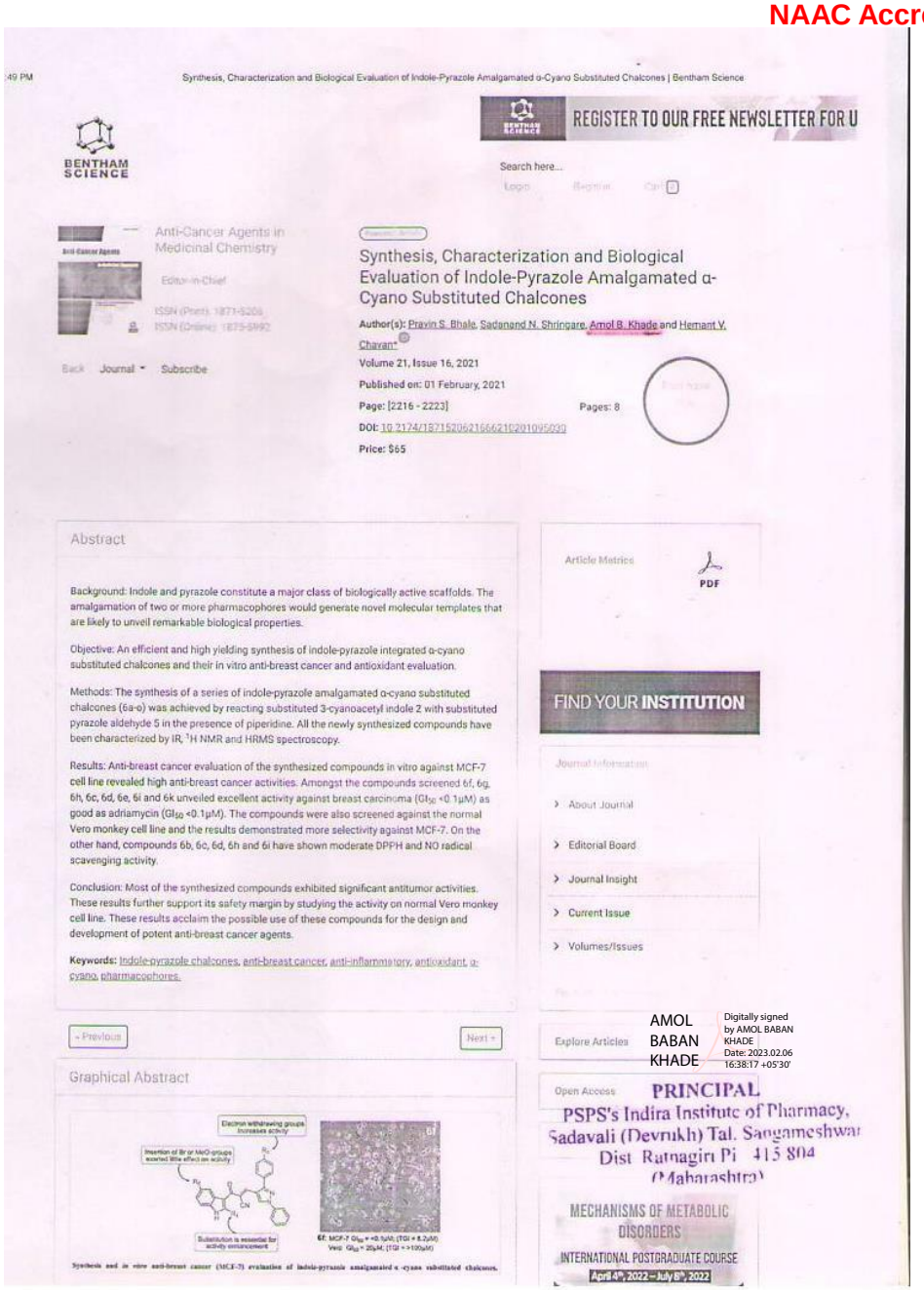

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Synthesis, Characterization and Biological Evaluation of Indole-Pyrazole Amalgamated α-Cyano Substituted Chalcones

Author(s): Pravin S. Bhale, Sadanand N. Shringare, Amol B. Khade and Hemant V. Chavan*

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Abstract

Background: Indole and pyrazole constitute a major class of biologically active scaffolds. The amalgamation of two or more pharmacophores would generate novel molecular templates that are likely to unveil remarkable biological properties.

Objective: An efficient and high yielding synthesis of indole-pyrazole integrated α-cyano substituted chalcones and their in vitro anti-breast cancer and antioxidant evaluation.

Methods: The synthesis of a series of indole-pyrazole amalgamated α-cyano substituted chalcones (6a-o) was achieved by reacting substituted 3-cyanoacetyl indole 2 with substituted pyrazole aldehyde 5 in the presence of piperidine. All the newly synthesized compounds have been characterized by IR, ^{1}H NMR and HRMS spectroscopy.

Results: Anti-breast cancer evaluation of the synthesized compounds in vitro against MCF-7 cell line revealed high anti-breast cancer activities. Amongst the compounds screened 6f, 6g, 6h, 6c, 6d, 6e, 6i and 6k unveiled excellent activity against breast carcinoma (GI_{50} <0.1μM) as good as adriamycin (GI_{50} <0.1μM). The compounds were also screened against the normal Vero monkey cell line and the results demonstrated more selectivity against MCF-7. On the other hand, compounds 6b, 6c, 6d, 6h and 6i have shown moderate DPPH and NO radical scavenging activity.

Conclusion: Most of the synthesized compounds exhibited significant antitumor activities. These results further support its safety margin by studying the activity on normal Vero monkey cell line. These results acclaim the possible use of these compounds for the design and development of potent anti-breast cancer agents.

Keywords: Indole-pyrazole chalcones, anti-breast cancer, anti-inflammatory, antioxidant, α-cyano, pharmacophores.

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MECHANISMS OF METABOLIC DISORDERS
INTERNATIONAL POSTGRADUATE COURSE
April 4th 2022 – July 8th 2022

P. S. P. Sanstha's
Indira Institute Of Pharmacy
A/P. Sadavali (Devrukh)
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Dist: Ratnagiri-415804
(Maharashtra)
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Fax: 02354-241499
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Web: www.iip.ind.in
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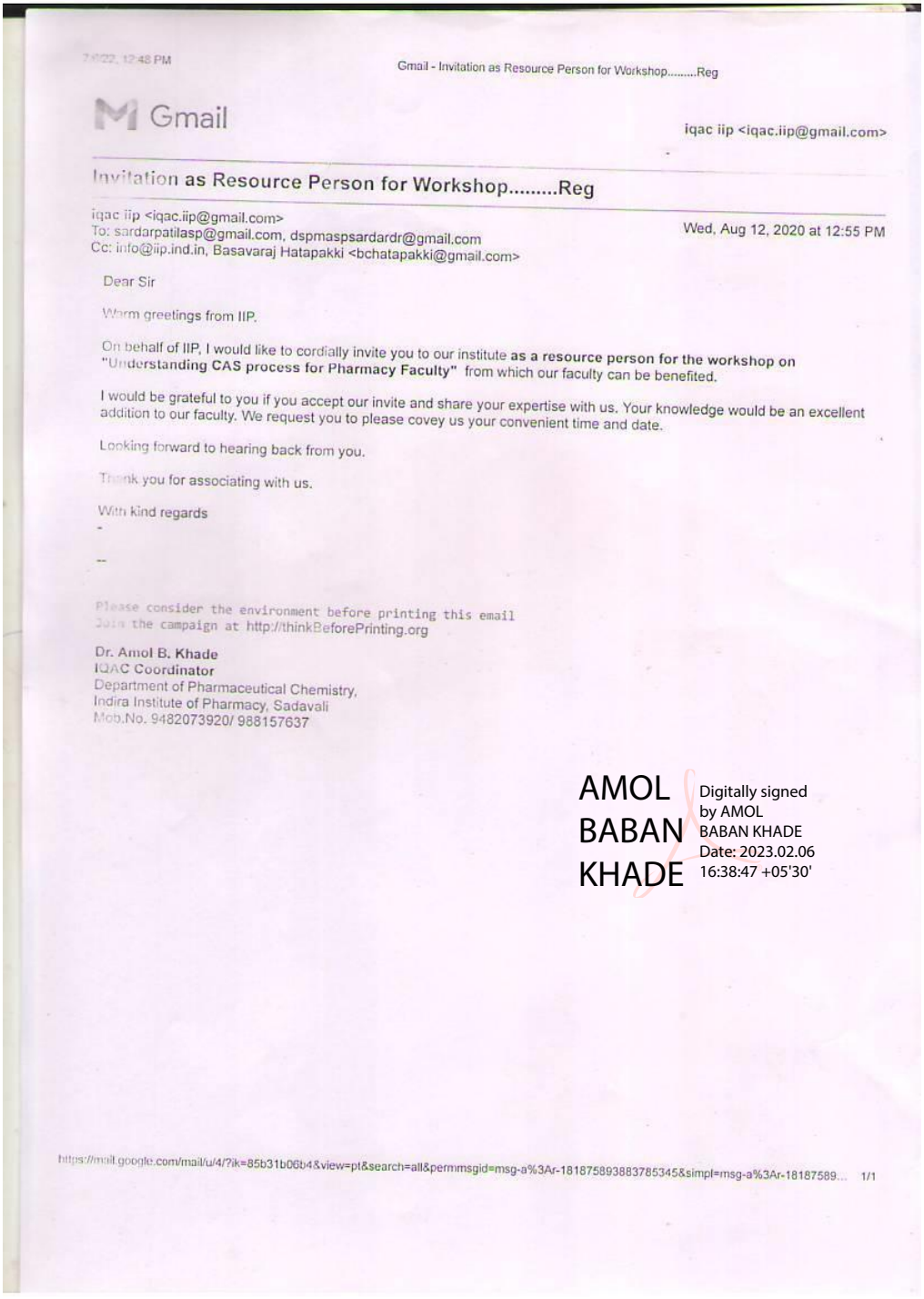

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iqac iip <iqac.iip@gmail.com>

Invitation as Resource Person for Workshop.....Reg

iqac iip <iqac.iip@gmail.com> Wed, Aug 12, 2020 at 12:55 PM
To: sardarpatilasp@gmail.com, dspmaspsardardr@gmail.com
Cc: info@iip.ind.in, Basavaraj Hatapakki <bchatapakki@gmail.com>

Dear Sir

Warm greetings from IIP.

On behalf of IIP, I would like to cordially invite you to our institute **as a resource person for the workshop on "Understanding CAS process for Pharmacy Faculty"** from which our faculty can be benefited.

I would be grateful to you if you accept our invite and share your expertise with us. Your knowledge would be an excellent addition to our faculty. We request you to please covey us your convenient time and date.

Looking forward to hearing back from you.

Thank you for associating with us.

With kind regards
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Dr. Amol B. Khade
IQAC Coordinator
Department of Pharmaceutical Chemistry,
Indira Institute of Pharmacy, Sadavali
Mob.No. 9482073920/ 988157637

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IQAC, of IIP has successfully conducted guest lecture on "Understanding CAS and API process for its faculty", Dr. Sardar Patil, Asst. Professor and HOD of Geography, ASP College, Devrukh was invited as the resource person for guest lecture.

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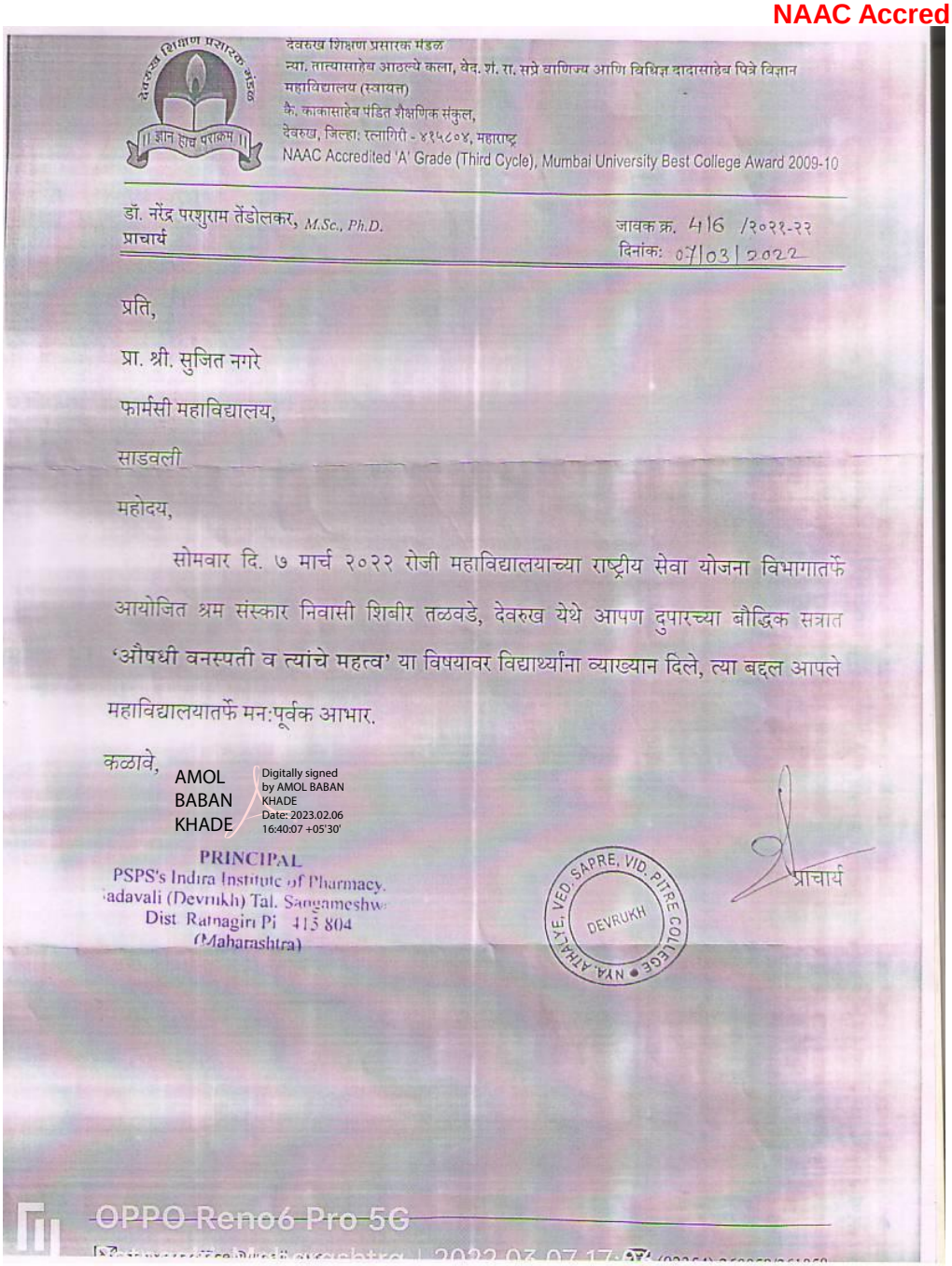

देवरुख शिक्षण प्रसारक मंडळ
न्या. सात्यासाहेब आठल्ये कला, वेद. शं. रा. सप्रे वाणिज्य आणि विधिज्ञ दादासाहेब पित्रे विज्ञान महाविद्यालय (स्वायत्त)
कै. काकासाहेब पंडित शैक्षणिक संकुल,
देवरुख, जिल्हा: रत्नागिरी - ४१५८०४, महाराष्ट्र
NAAC Accredited 'A' Grade (Third Cycle), Mumbai University Best College Award 2009-10

डॉ. नरेंद्र परशुराम तेंडोलकर, M.Sc., Ph.D.
प्राचार्य

जावक क्र. 416 /२०२१-२२
दिनांक: 07/03/2022

प्रति,

प्रा. श्री. सुजित नगरे

फार्मसी महाविद्यालय,

साडवली

महोदय,

सोमवार दि. ७ मार्च २०२२ रोजी महाविद्यालयाच्या राष्ट्रीय सेवा योजना विभागातर्फे आयोजित श्रम संस्कार निवासी शिबीर तळवडे, देवरुख येथे आपण दुपारच्या बौद्धिक सत्रात 'औषधी वनस्पती व त्यांचे महत्व' या विषयावर विद्यार्थ्यांना व्याख्यान दिले, त्या बद्दल आपले महाविद्यालयातर्फे मन:पूर्वक आभार.

कळावे,

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PRINCIPAL
PSPS's Indira Institute of Pharmacy,
Sadavali (Devrukh) Tal. Sangameshwar
Dist. Ratnagiri Pi 415 804
(Maharashtra)

NVA. ATHALYE. VED. SAPRE. VID. PITRE COLLEGE DEVRUKH

प्राचार्य

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Our faculty Mr. Sujit K. Nagare (HOD: Department of Pharmacognosy) delivered an invited talk at village Talawade, Dist: Ratnagiri in National Service Scheme special camp organized by ASP College of Arts, Commerce, and Science on 7th March 2022. He highlighted the 'Importance of Medicinal plant' in his talk.

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Report of Webinar

Topic: Gender Equality Today For Sustainable Tomorrow

Resource person: Dr. Prashant T. Nargude (Assistant Professor, A.S.P College, Devrukh)

Date: 11 April – 30 March 2022

No. of participants: 90

College Women Development Cell of the institute organized webinar on **"Gender Equality Today For Sustainable Tomorrow"** on 30th March 2022 The theme of day was **"Gender Equality Today For Sustainable Tomorrow"**. The programme was followed by felicitation of all the dignitaries by Dr. Amol B. Khade (Principal, IIP). Ms. Vaishnavi B. Nalawade (Coordinator, CWDC) highlighted welcome address. Dr. Amol B. Khade delivered principal address.

Dr. Prashant T. Nargude, Assistant Professor, A.S.P College Devrukh (Resource person) expressed his thoughts. The main objective of the webinar was to empower students and help them to understand the concept of Gender Equality and Women Empowerment. However, the session brought to the fore much serious issues and the plight of uninformed women who fall prey to these inhumane and irrational practices in our society. It was an informative and insightful session.

Girl students of the institute, showed active participation in the webinar. 90 girls students were participated for the event.

CWDC members were actively involved to made the programme successfully. The program was concluded with vote of thanks, by Ms. vaishnavi B. Nalawade.

P.S.P. Sanstha's Indira Institute of Pharmacy Sadavali (Devrukh)

Principal
Indira Institute of Pharmacy
Sadavali (Devrukh)

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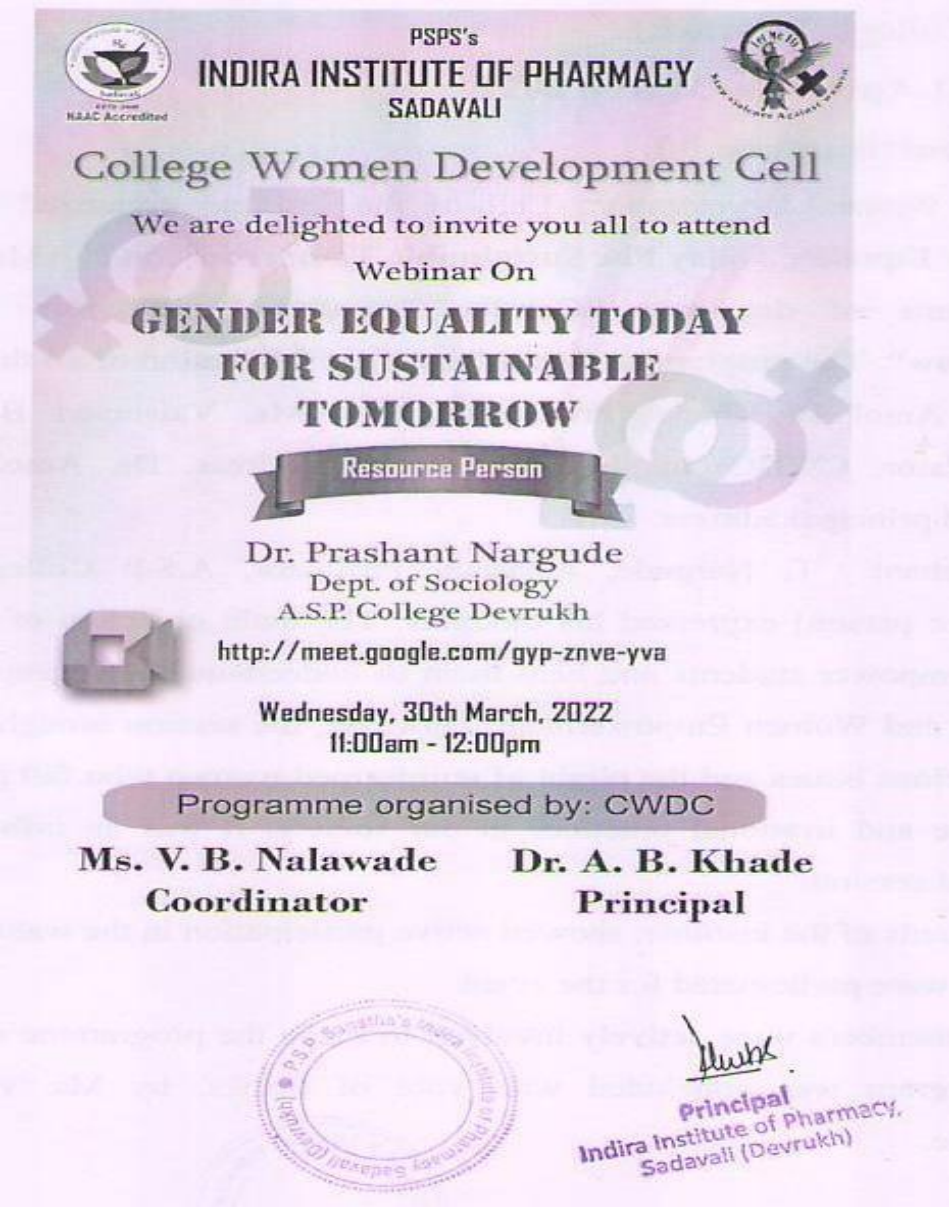

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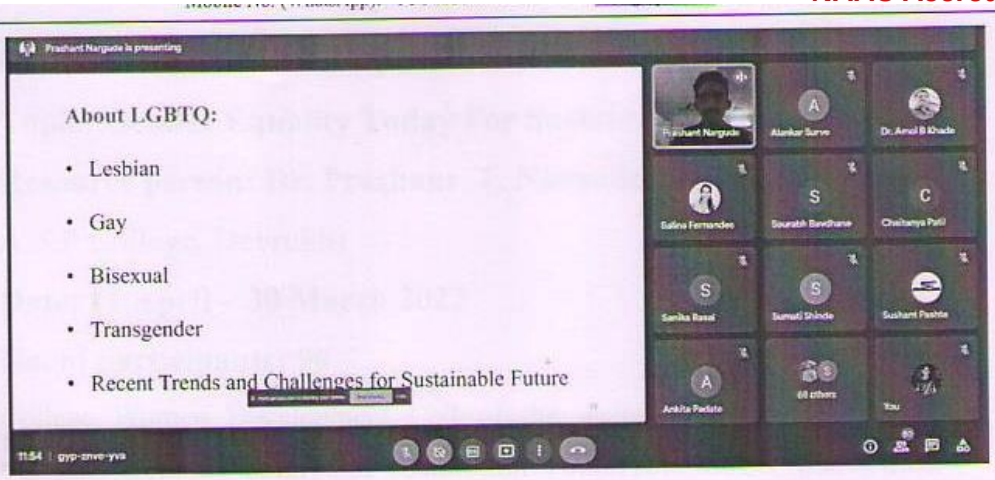

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P.S.P. Sanstha's Indira Institute of Pharmacy Sadavali (Devrukh)

Principal
Indira Institute of Pharmacy
Sadavali (Devrukh)

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Adler Healthcare Pvt. Ltd.

TECHNICAL AGREEMENT

This agreement is made on this 05th April, 2022 between **M/s ADLER HEALTHCARE PVT.LTD.** (Adler) having its plant at **Plot No A-1, MIDC Sadavali, Tal Sangameshwar, Dist. Ratnagiri, 415804** which expression shall unless repugnant to the meaning or context thereof mean and include its associates, affiliates, legal representatives, officers, successors and permitted assigns of the - ONE PART
and PSPS's Indira Institute of Pharmacy, Sadavali having its facility at **Sadavali, Tal Sangameshwar, Dist. Ratnagiri, 415804** which expression shall unless repugnant to the meaning or context thereof mean and include its associates, affiliates, legal representatives, officers, successors and permitted assigns of the - OTHER PART.

WHEREAS

1. Adler is engaged in the business of manufacture and sale of Orthopaedic Implants, instrument and related devices (hereinafter referred to as "Products")
2. PSPS's Indira Institute of Pharmacy is an institution for teaching curriculum of Bachelor of Pharmacy and has established lab for various biological and related testing procedures. PSPS's Indira Institute of Pharmacy offers available services to industry under the scheme of the organization to develop industry interaction for enhancement and application of knowledge gained through various courses.
3. Adler wanted to develop and avail services at Indira Institute of Pharmacy using the domain knowledge of the college faculty and Adler's documentation.

NOW THEREFORE in consideration of mutual obligations, both the parties agree as follows:

1. Products & Processing:
   a. Adler will define the service requirements to fulfill the requirements in the form of work order and share the requirements with PSPS's Indira Institute representatives through mails, personal meetings and wherever possible reference procedures and documents are shared.
   b. PSPS's Indira Institute of Pharmacy will ensure carrying out work as per Adler requirements.
   c. PSPS's Indira Institute of Pharmacy will make sure that there are no deviations to the requirements specified by Adler and in case if any need arises for changes required in the agreed requirements; changes will be made only after written approval from Adler's Authorised Representative.
2. Records:
   a. PSPS's Indira Institute of Pharmacy shall keep conclusive records of all the Work carried out for Adler including the raw data and current good documentation practices will be followed always.
   b. PSPS's Indira Institute of Pharmacy shall retain all the records pertaining to the work carried out for Adler for a period not less than 6 years. This will include the process records as well as the historic data of calibration and maintenance of the equipment involved in the procedures.
   c. Adler shall have access to these records with due intimation to Indira Institute of Pharmacy.
3. Certificate of Testing:
   a. After completion of work carried out for Adler; PSPS's Indira Institute of Pharmacy shall prepare a certificate which will contain necessary details as specified in the requirements or agreed format for the test report.
   b. PSPS's Indira Institute of Pharmacy shall ensure correctness of the contents of the test certificates and other documentations As per requirement specification.
4. Return of Adler documents and property:
5. PSPS's Indira Institute of Pharmacy shall return products and documents received from Adler once the agreed services are fulfilled and completed along with the reports generated for the work carried out. Storage:

Regd. Office.
Plot No. A-1, MIDCSadavali, Tal. Sangameshwar, Dist. Ratnagiri, Maharashtra, IN. PIN 415804.
Ph. +91 8055136000, +91 8055146000. Email. Info@adler-healthcare.com

MOU with Adler Healthcare Pvt. Ltd.

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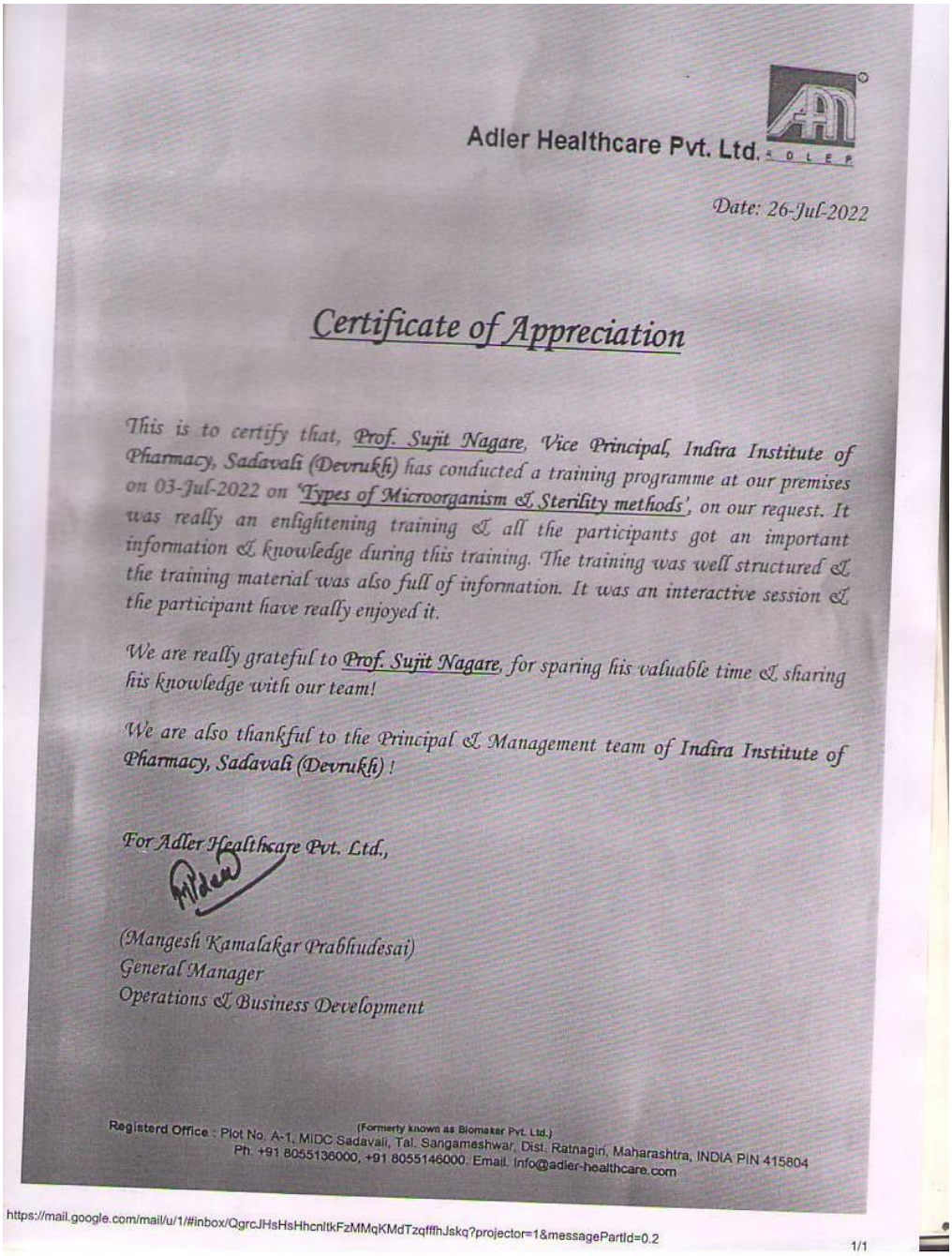

Adler Healthcare Pvt. Ltd.

Date: 26-Jul-2022

Certificate of Appreciation

This is to certify that, Prof. Sujit Nagare, Vice Principal, Indira Institute of Pharmacy, Sadavali (Devrukh) has conducted a training programme at our premises on 03-Jul-2022 on 'Types of Microorganism & Sterility methods', on our request. It was really an enlightening training & all the participants got an important information & knowledge during this training. The training was well structured & the training material was also full of information. It was an interactive session & the participant have really enjoyed it.

We are really grateful to Prof. Sujit Nagare, for sparing his valuable time & sharing his knowledge with our team!

We are also thankful to the Principal & Management team of Indira Institute of Pharmacy, Sadavali (Devrukh) !

For Adler Healthcare Pvt. Ltd.,

(Mangesh Kamalakar Prabhudesai)
General Manager
Operations & Business Development

(Formerly known as Biomaker Pvt. Ltd.)
Registerd Office : Plot No. A-1, MIDC Sadavali, Tal. Sangameshwar, Dist. Ratnagiri, Maharashtra, INDIA PIN 415804
Ph. +91 8055136000, +91 8055146000. Email. info@adler-healthcare.com

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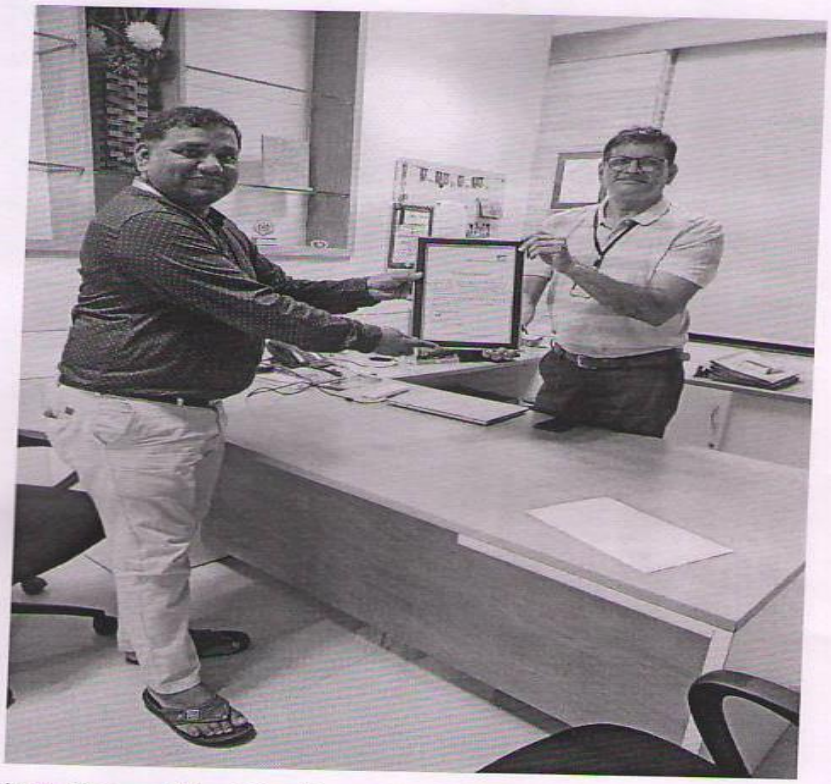

Mr. Sujit K. Nagare (Asst. Professor and HOD of Pharmacognosy) delivered invited talk at Adler Mediequipment Pvt. Ltd. Sadavali, Devrukh.

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MEMORANDUM OF UNDERSTANDING (MoU)

The Prabodhan Shikshan Prasarak Sanstha's [illegible] Institute of Pharmacy, Sadavali, Tal: Sangameshwar, Dist: Ratnagiri hereinafter referred to as the **first party** (which term the next otherwise requires shall include its representatives, successors of assignees of the second party)

And

Govindrao Nikam College of Pharmacy, Sawarde, Tal. Chiplun & Dist. Ratnagiri herein referred to as second party (which term the context otherwise requires shall include its representative success of assignees of the first party)

PREAMBLE:

a) The Prabhodhan Shikshan Prasarak Sanstha established Indira Institute of Pharmacy at Sadavali (Devrukh) in the year 2008 which offers B Pharmacy programme approved by PCI and AICTE, New Delhi, Recognized by the Directorate of Technical Education, Government of Maharashtra and is affiliated to the University of Mumbai. IIP is located on 6 acres of land at village Sadavali. The institute has spacious lecture halls, tutorial halls, seminar room, well-equipped laboratories, Computer Lab and a voluminous library to impart best pharmaceutical education to the students. The institute has well-equipped laboratories with highly qualified teaching faculty in all the branches. The institute is engaged in quality research and has qualified and experienced faculty.

b) Govindrao Nikam College of Pharmacy, Sawarde is situated in Sawarde, Ratnagiri in the Maharashtra state of India. Established in 2005, it is approved by AICTE, the State Government of Maharashtra and DTE Mumbai, and it is affiliated to the University of Mumbai. Sawarde Pharmacy, Ratnagiri offers 3 courses namely Diploma Pharmacy and Degrees like, B.Pharm, M.Pharm. Sawarde Pharmacy campus is spread over 6.23 Acres. Hostel facility is available for the students.

MOU with Govindrao Nikam College of Pharmacy, Sawarde

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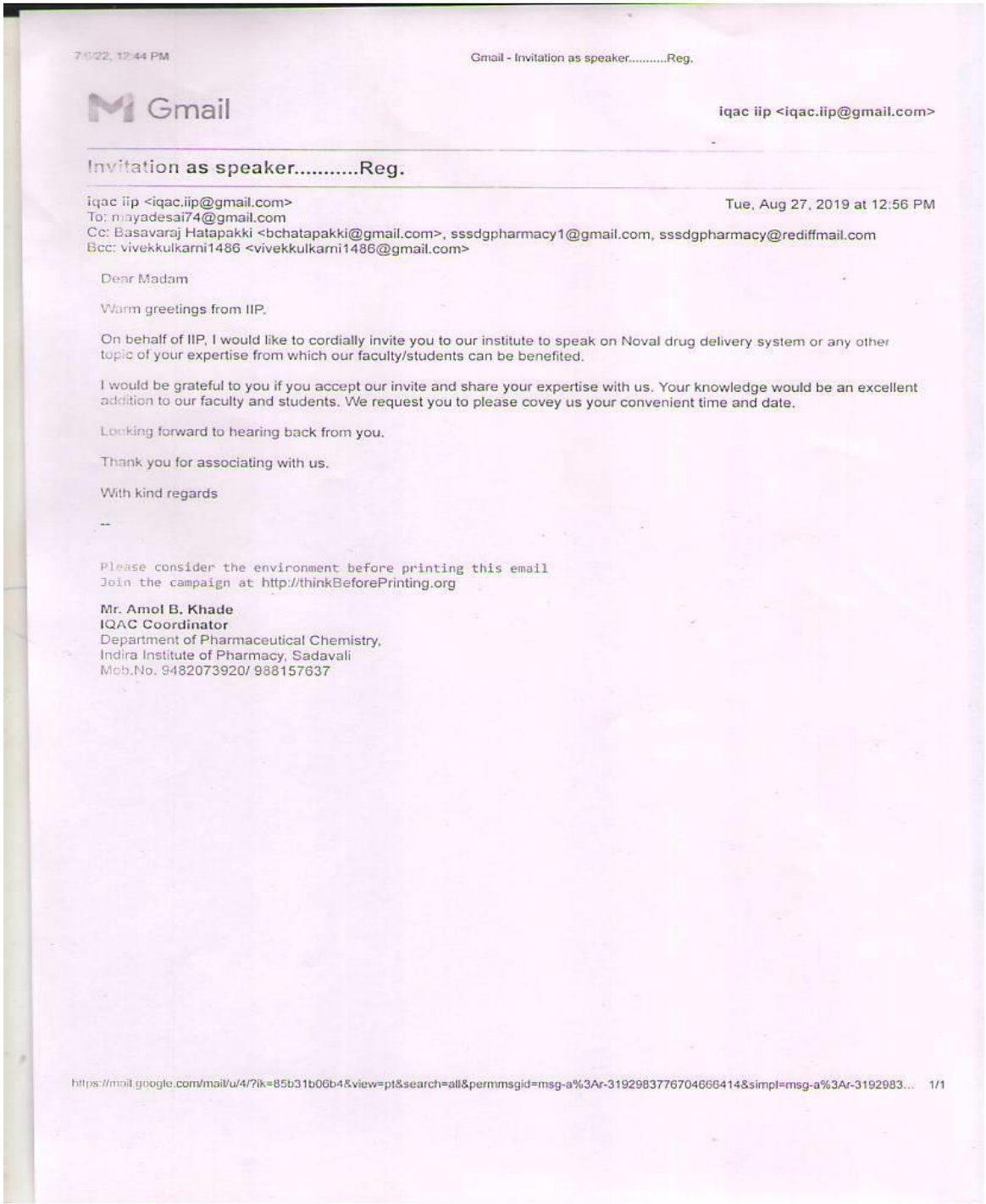

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To: mayadesai74@gmail.com
Cc: Basavaraj Hatapakki <bchatapakki@gmail.com>, sssdgpharmacy1@gmail.com, sssdgpharmacy@rediffmail.com
Bcc: vivekkulkarni1486 <vivekkulkarni1486@gmail.com>

Dear Madam

Warm greetings from IIP.

On behalf of IIP, I would like to cordially invite you to our institute to speak on Noval drug delivery system or any other topic of your expertise from which our faculty/students can be benefited.

I would be grateful to you if you accept our invite and share your expertise with us. Your knowledge would be an excellent addition to our faculty and students. We request you to please covey us your convenient time and date.

Looking forward to hearing back from you.

Thank you for associating with us.

With kind regards

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Mr. Amol B. Khade
IQAC Coordinator
Department of Pharmaceutical Chemistry,
Indira Institute of Pharmacy, Sadavali
Mob.No. 9482073920/ 988157637

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PSPS's
INDIRA INSTITUTE OF PHARMACY
A Report on guest lecture 'Novel Drug Delivery System'
Date: 29/08/2019

Department of Pharmaceutics of Indira Institute of Pharmacy has organized guest lecture on 'Novel Drug Delivery System' on 29th August 2019. Mrs Maya T. Desai, Associate professor, department of pharmaceutics, GNCOP, Sawarde was resource person for lecture.

It was an intriguing and informative session wherein she explained the importance of 'Novel Drug Delivery System' in drug delivery. The objective of the lecture was to focus on the NDDS in drug delivery.

Event Photographs

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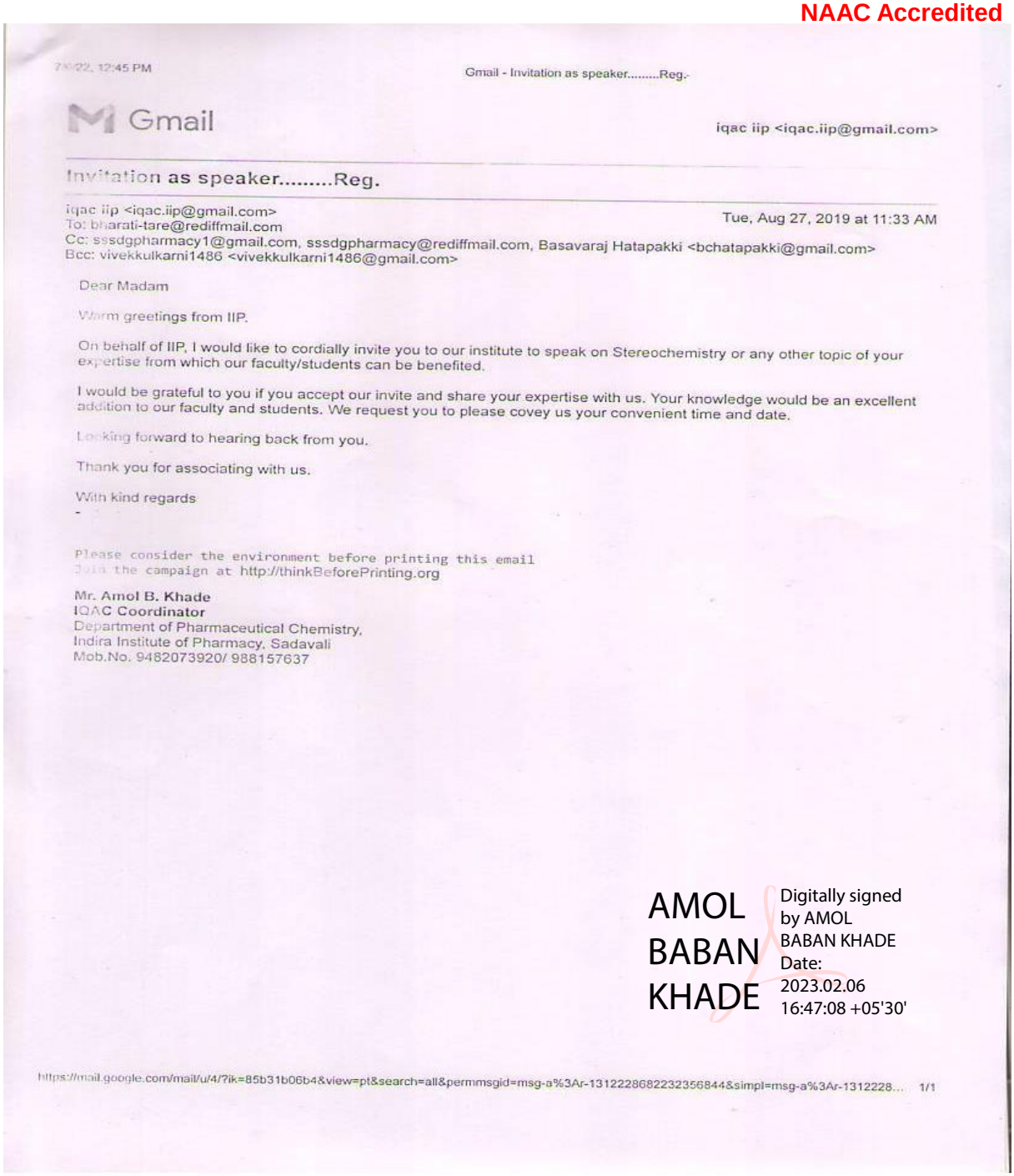

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Bcc: vivekkulkarni1486 <vivekkulkarni1486@gmail.com>

Dear Madam

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INDIRA INSTITUTE OF PHARMACY

A Report on guest lecture 'stereochemistry'

Date: 29/08/2019

Department of Pharmaceutical Chemistry of Indira Institute of Pharmacy, Sadavali has organized guest lecture on stereochemistry on 29/08/2019. Mrs B. S. Tare, Assistant Professor, department of pharmaceutical chemistry, GNCOP, Sawarde was resource person for lecture.

It was very informative and interactive session on stereochemistry.

Event Photographs

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LIQUISOLID COMPACT: AN APPROACH TO ENHANCE DISSOLUTION RATE OF DRUGS

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ABSTRACT

The dissolution rat improvements of poorly water-soluble drugs is major challenge for the pharmaceutical industry because of their low solubility. Due to different novel technology, the number of candidate increased. In that most of the drugs have highly lipophilic in nature. These drugs are belongs to BCS (Biopharmaceutical classification system) class II and class IV. Bioavailability of poorly water soluble drugs is limited by their solubility and dissolution rate. To counter these problems different technologies come in the market but they also have many disadvantages. The liquisolid technology as described by Spireas is a liquid which is transformed into a free flowing, readily compressible and apparently dry powder by simple physical blending with selected excipients like the carrier and coating material. This review is mainly based on the history, advantages, disadvantages, theory, mechanism, evaluation and materials used in the liquisolid system. According to literature review the liquisolid compact have greater applicability in the pharmaceutical formulation. The liquisolid compacts approaches the great improvement in the solubility of chemical entity.

Keywords: Liquisolid compacts, Solubility, Bioavailability, Carrier material, Coating material

INTRODUCTION

In the pharmaceutical industry oral dosage form is very easy as compared to other dosage forms. The oral dosage forms is convenient for patient also it does not require sophisticated machinery and complex manufacturing procedure, but the major problem of oral dosage form that they should have high solubility. The characteristics of new chemical entity shifted toward higher molecular weight, this increases the lipophilicity therefore it decreases their aqueous solubility. It has been reported that about 40% of the drug in the development stage and 60% of synthesized drugs have poor water solubility.[1] The BCS class II and IV drug i.e. low soluble or insoluble drug in aqueous medium are very challenging to the pharmaceutical industry. Solubility is one of the major factor to achieve desired concentration of drug in the blood stream for pharmacological response.[2] the aqueous solubility of poorly water soluble drug usually less than 100µg/ml.[3] The low solubility of drug cause different problem like low bioavailability, alter the release of dosage form. There are different modifications to tackle this issue i.e. chemical modification, physical modification but they are not cost effective due to the involvement of sophisticated machinery, advanced manufacturing techniques and more complex technology also sometimes leads to unsatisfactory results and lack of stability. In past few years different new techniques have been developed such as drug microionization, solid dispersion, co-precipitation, lyophilization, liposomes, niosomes, microencapsulation, use of prodrug and derivatization process and inclusion of drug solution into soft gelatin capsule.[1]

The most promising technique for the enhancement of water insoluble drug is "*liquisolid technique*". It was developed by Spireas et. al. 2002 which improve dissolution properties of water insoluble or poorly soluble drugs by increasing surface area and wetting area. The liquisolid technique is based upon the dissolving insoluble drug in the non-volatile solvent and admixture of drug loaded solutions with appropriate carrier and coating material to convert into acceptably flowability and compressibility to the powder.[4] The using liquisolid technique a liquid medication converted into a dry looking non-adherent free flowing and readily compressible powder by a simple blending with selected powder excipients referred to as the carrier and coating material.[5] Apart from dissolution enhancement, liquisolid technique has recently been investigated as a tool to retard drug

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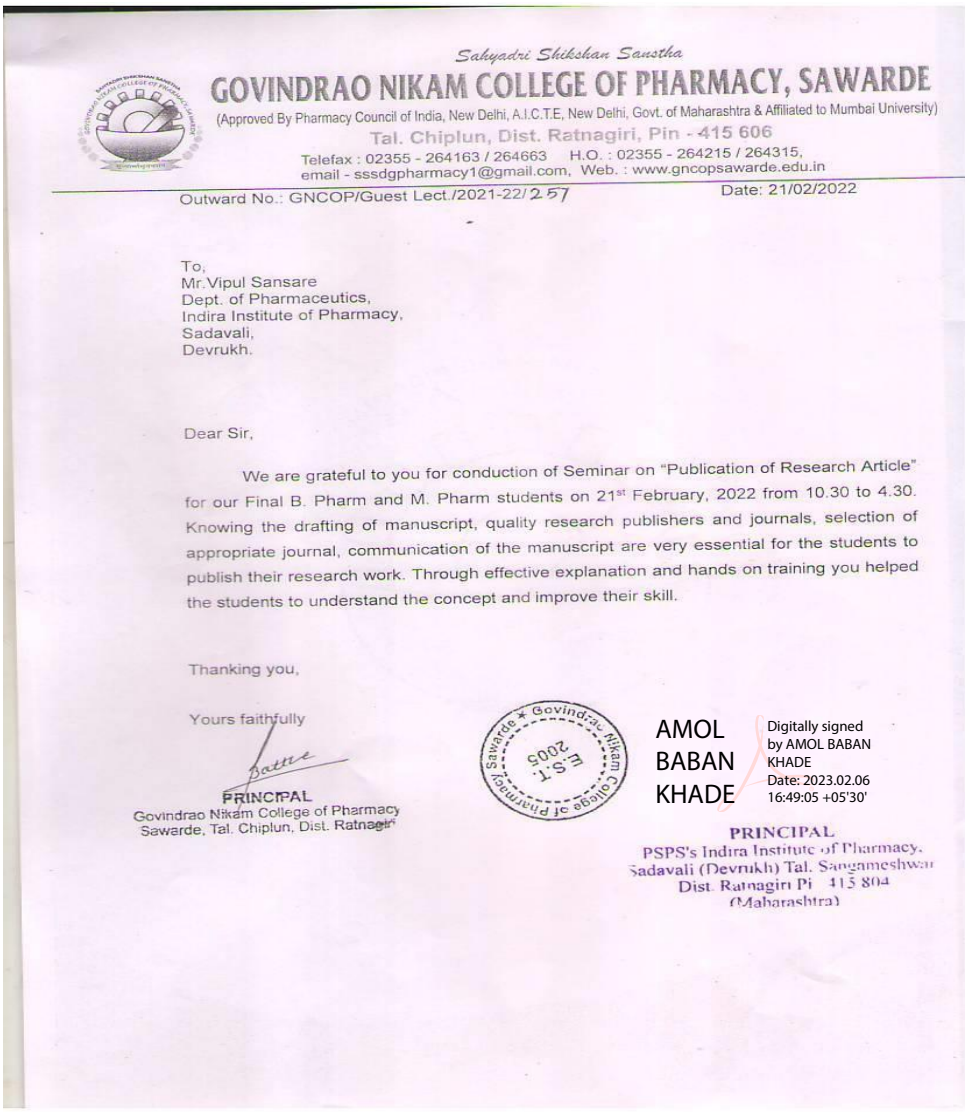

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To,
Mr.Vipul Sansare
Dept. of Pharmaceutics,
Indira Institute of Pharmacy,
Sadavali,
Devrukh.

Dear Sir,

We are grateful to you for conduction of Seminar on "Publication of Research Article" for our Final B. Pharm and M. Pharm students on 21st February, 2022 from 10.30 to 4.30. Knowing the drafting of manuscript, quality research publishers and journals, selection of appropriate journal, communication of the manuscript are very essential for the students to publish their research work. Through effective explanation and hands on training you helped the students to understand the concept and improve their skill.

Thanking you,

Yours faithfully

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