



SDPC
E-BULLETIN
JAN-MARCH
2021



SDPC E-BULLETIN

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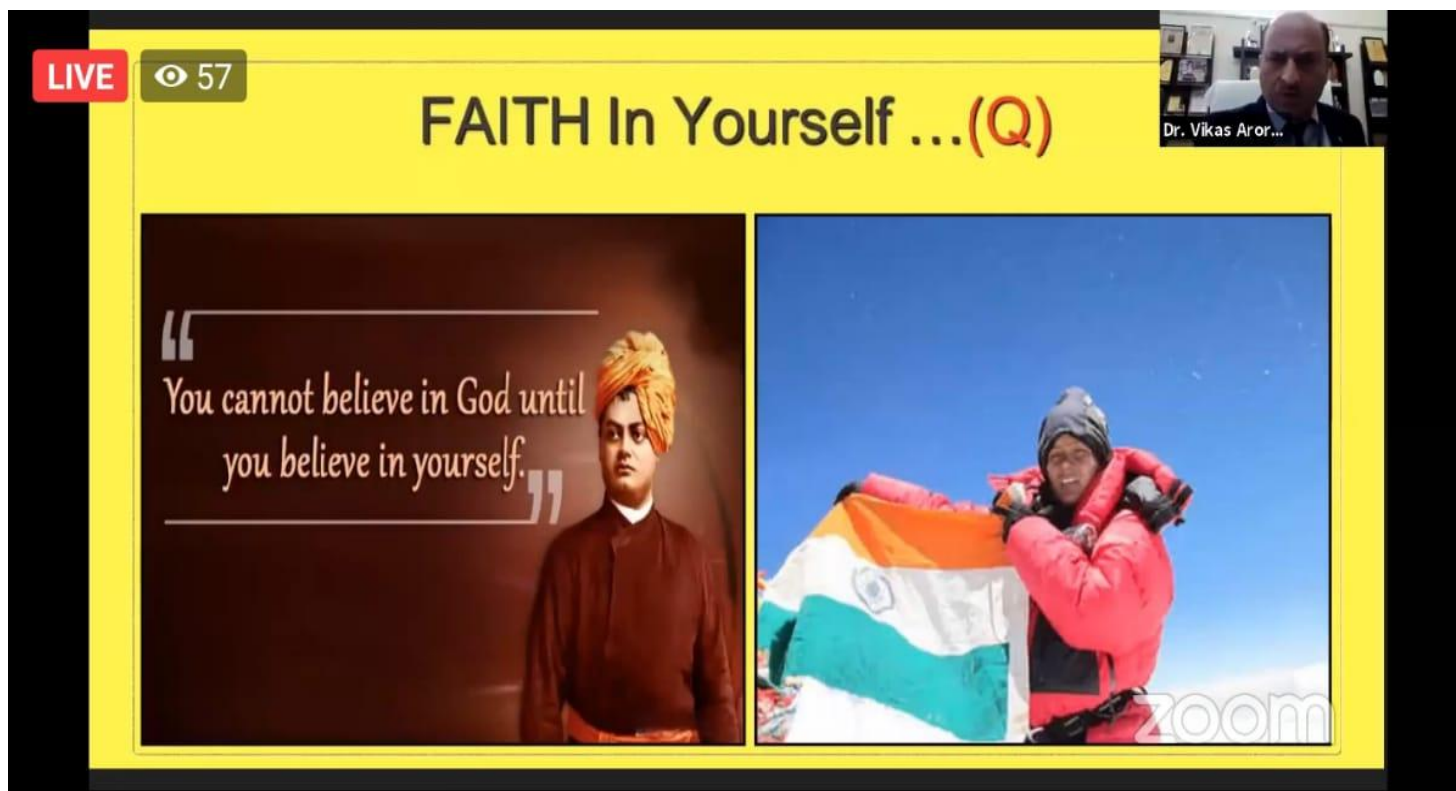
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Research Fellow & Deputy Director, Institute of Atomic & Molecular Sciences,
Academia Sinica, National Taiwan University, Taipei, Taiwan.

Online webinar on "Swami Vivekananda: Message to Youth"



Date: 12/01/2021

Day: Tuesday

Time: 11.00 am Onwards

Participants: Pharm D. And B.Pharm Students

Venue: Zoom Meeting and Facebook Live Page



Celebration of Netaji Subhash Chandra Bose's 125th Birth Anniversary

<http://sdpc.co.in/>
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SHREE DHANVANTARY PHARMACY COLLEGE



Salute to our 'National Hero'

नेताजी सुभाष चन्द्र
बोस

23 जनवरी 1897-18 अगस्त 1945

on his Birth anniversary






Shree Dhanvantary Pharmacy College, Kim Surat.
 National Service Scheme (NSS) Committee

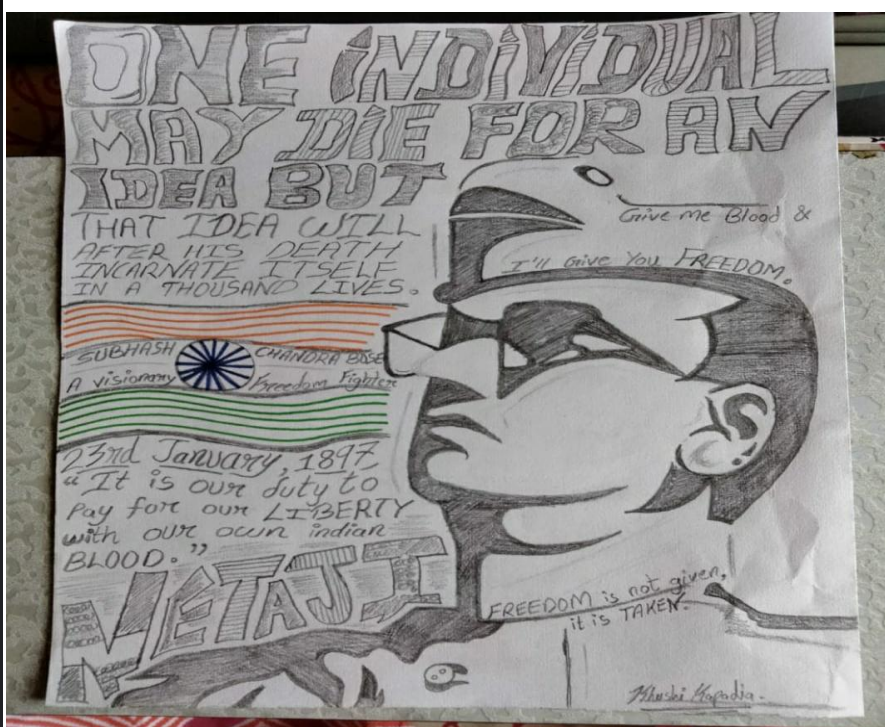
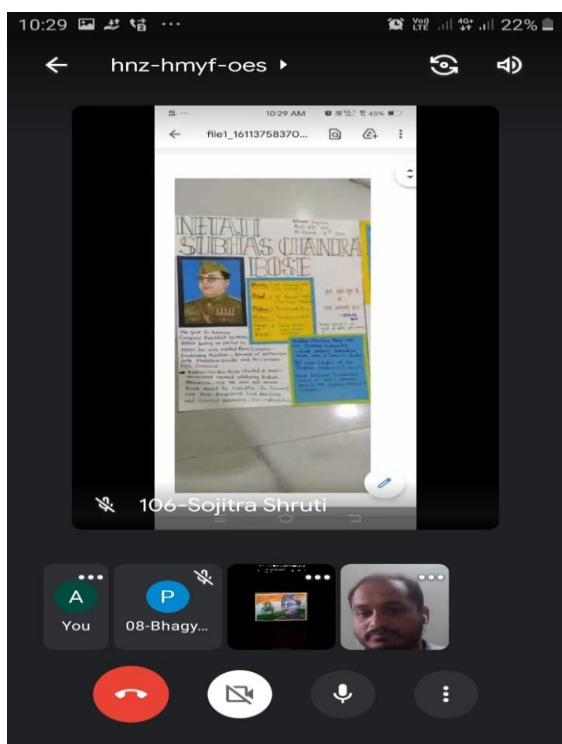
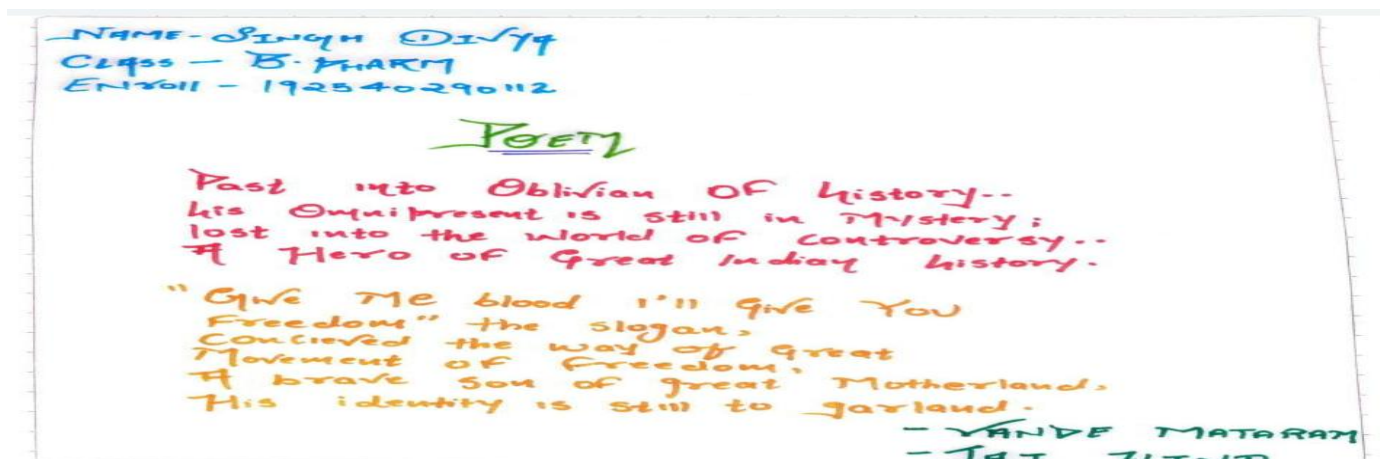


Organise competition On the occasion of Netaji Subhash Chandra Bose's
 Birthday Anniversary on 23rd January, 2021

SCHEDULE

Time of Events	Event Name	Evaluator Name
10:00 A.M. to 11:30 A.M.	E-poster presentation	Dr. Uttam More (8401841577) Dr. Harshil Patel (7575075991)
12.00 P.M. to 3:00 P.M.	Essay Writing	Ms. Hardi Patel (8460486000)
	Poetry Writing	Dr. Pankaj Shirsath (9130241891)
	Slogan Writing	Ms. Rozina Patel (8153807022)
	Sketch Competition	Ms. Hirvita Bhatt (9998980495)

- ❖ In Essay writing minimum 300 words require.
- ❖ Topic is "Netaji Subhash Chandra Bose: A visionary Freedom Fighter" for all events.
- ❖ Competition is open to all SDPC students.
- ❖ All the Winners will get Certificate.
- ❖ All the participants should send pdf copy of respective events to Evaluator with proper details (Name, class and enrolment no.) For evaluation purpose in given time.
- ❖ For any query contact Nss Co-Ordinators: Mrs. Dhara Vashi (8980776602) and Ms Ayushi Chokshi (9265128212)



Name of event : Celebration of Netaji Subhash Chandra Bose's 125th Birth Anniversary

Name of participants or semester/department: Pharm D and B.Pharm Student, Faculty members

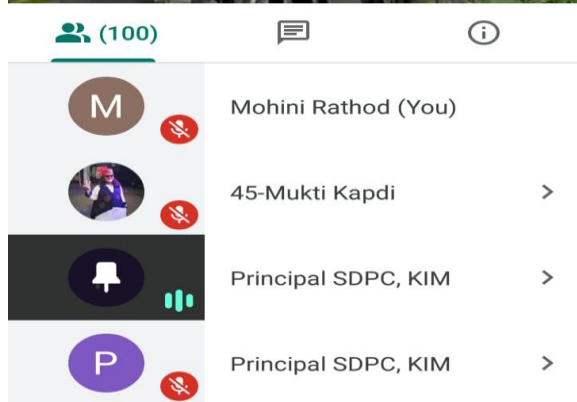
Date : 23/01/2021

Time: 10.00 am to 03.00 pm



Republic Day Celebration





Event: Republic Day

Date: 26/01/2021

Day: Tuesday

Time: 8.30 am to 10.00 am

Participants: All Teaching and Non teaching Staff of SDPC Campus

Venue: SDPC Campus, Kim



World Cancer day celebration



**Shree Dhanvantary Pharmacy college,
Kim, Surat**

NSS Committee

Organize

Quiz Competition

On

“World’s Cancer Day”

4th February, 2021

Timing: 2:00 - 2:30 p.m.

Link for quiz:

https://docs.google.com/forms/d/e/1FAIpQLSei9jRu6hEi2UQui0hMatnCqiEE11zi3Tquh4t7kfiKC2TDA/viewform?usp=sf_link

NOTE:

- Questions will be based on general knowledge of cancer/ etiology /complications/therapy/Drug Treatment
- All participants who score above 70% will get E-certificate
- Total 20 questions. All are compulsory
- Time Limit: 30 Minutes
- For any query contact to NSS Co-ordinators: Mrs. Dhara Vashi (8980776602) & Ms. Ayushi Chokshi (9265128212)

SHREE DHANVANTARY PHARMACY COLLEGE, KIM


**(B. Pharm Accredited by NBA, New Delhi)
Approved by AICTE, PCI & Affiliate to GTU**





World Cancer Day celebration 2021
Certificate of Appreciation



This is to certify that **Desai Sweta Jigneshbhai** Student of Shree Dhanvantary Pharmacy College from **B.pharm/1st year** has participated in online Quiz competition as part of World Cancer Day Celebration held on 04th February, 2021 at SDPC, Kim and Scored more than 70%.


Mrs. Dhara Vashi
NSS Coordinator


Dr. Uttam More
Academic Head


Dr. M.N. Noolvi
Principal



Online Quiz on "world's Cancer day"

Shree Dhanvantary Pharmacy College, Kim, Surat
Date: 4/02/2021
Time: 2.00-2:30 P.M.

Email address *

Valid email address

This form is collecting email addresses. [Change settings](#)

Full Name(As required in Certificate) *

Name of Event: World cancer day

Date: 04/02/2021

Day: Thursday

Time: 01.00 pm to 02.30 pm

Participated students: B.Pharm Students & Pharm. D students

Venue: SDPC Campus, Kim

Training of Polio Vaccination at “Pulse Polio Immunization Campaign Organised by SMC (Surat Municipal Corporation)”

Photographs





Event: Training of Vaccination at Pulse Polio Immunization Campaign

Date: 31/01/2021 To 03/02/2021

Time: 9:00 AM to 05:00 PM

Participated students: B.Pharm Students & Pharm. D students

Venue: Different UHC Centres of SMC



DAYS CELEBRATION





Name of Event: DAYS CELEBRATION

Date: 12/02/2021 to 16/02/2021


Time: 01.00 pm to 02.30 pm

Participated students: B.Pharm Students & Pharm. D students

Venue: SDPC Campus, Kim



AZADI KA AMRUT MAHOTASAV




SHREE DHANVANTARY PHARMACY COLLEGE, KIM

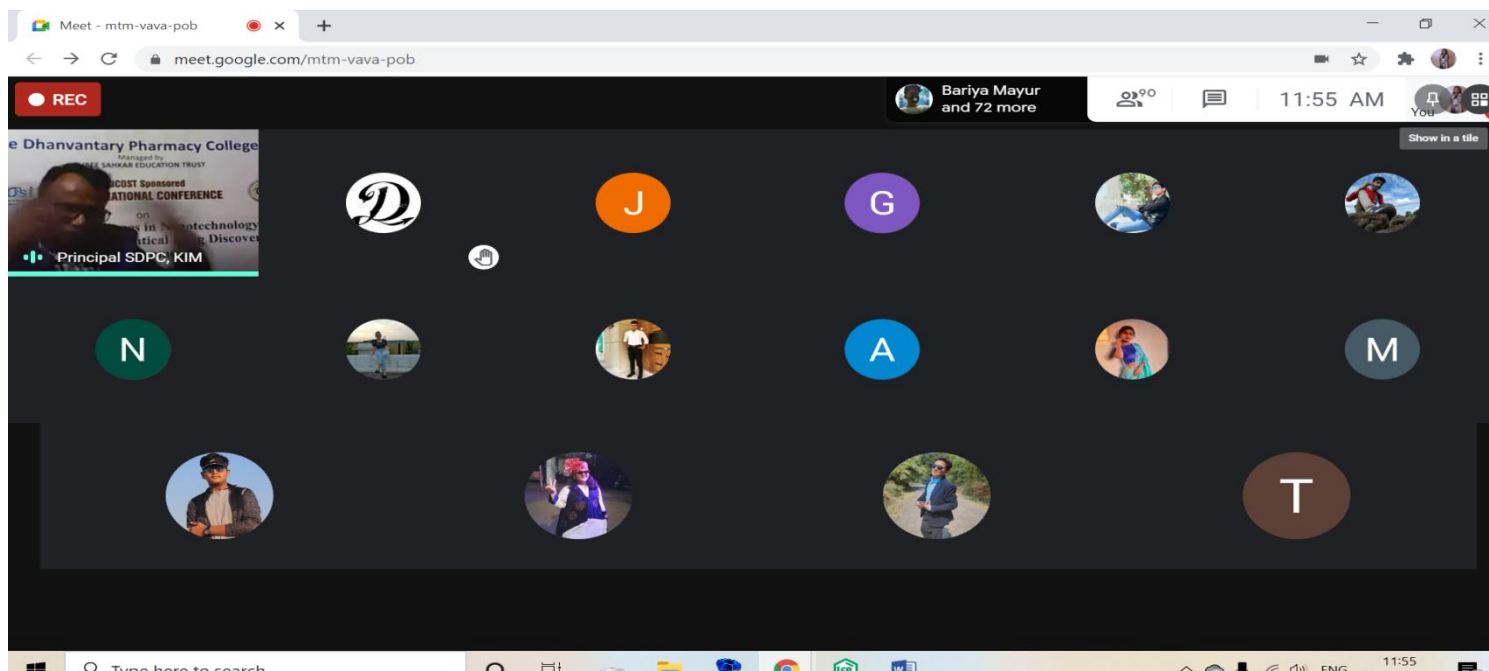
CELEBRATION OF 75 YEARS OF INDIA'S INDEPENDENCE - AZADI KA AMRUT MAHOTSAV

Webinar on "India- Before & After Freedom"

Date: 27th March, 2021 @ Google meet
Meet code: mtm-vava-pob
Speaker : Dr. M.N.Noolvi
Principal, Shree Dhanvantary Pharmacy College, Kim



DR. M. N. NOOLVI







Netaji Subhash chandra Bose : A Visionary Freedom Fighter

“Tum Mujhe Khoon Do
Main Tumhe Azadi Dunga”



We all have heard of this famous quote in our childhood by the great leader Subhash chandra Bose. This quote is just a glimpse of his sheer patriotism, exceptional leadership qualities and fight he had for the freedom of the country.

Subhash chandra Bose was certainly a Revolutionary freedom fighter. This true Indian man was born on the 23rd of January in 1897, Cuttack Orissa to an upper middle class family.

Subhas chandra Bose was an Indian nationalist, whose defiant patriotism made him a hero in India, but whose attempt during World War II to rid India of

Scanned with CamScanner

- British rule with the help of Nazi Germany and Imperial Japan left a troubled legacy.

When Netaji resigned from I.C.S. then he joined Indian Army as a Soldier. The pathetic condition of his fellow countrymen made him realise that non-violence alone cannot bring freedom. He not only had the most daring attitude but also was very sharp and a strategic planner who always took decisions wittingly. In the beginning he was a follower of Mahatma Gandhi but after becoming the president of Indian National Congress for the 2nd time he had major differences with Gandhi and resigned from there.



Slogan

India Is Calling.
Blood is Calling
To Blood. Get up.
We have no time to lose.
Take up your arms.
The road to Delhi
is the road to freedom.
Chalo Dilli!

Name :- Parmar Jaykumar
class :- 3rd Sem (B.Pharm)
Enroll - 192540290065

Events: 1) Webinar on "INDIA: BEFORE & AFTER FREEDOM"

2) THEME: FREEDOM FIGHTERS (Slogan writing, Poetry, Essay writing)

Date: 27/ 03/2021 & 03/04/2021

Day: Saturday

Participants: B.Pharm and Pharm.D students, Faculties

Venue: GOOGLE MEET online platform



World Science day



Shree Dhanvantary Pharmacy college, Kim, Surat

NSS Committee

Organize

Quiz Competition

On

“National Science Day”

28th February, 2021

Timing: 11:00-11:10 a.m.

All participants who score above 70% will get E-certificate

Link for quiz:

<https://forms.gle/cRcUaUiQ2XU4hQkR8>

Time Limit: 10 Minutes

NOTE: Total 10 questions. All are compulsory

- **For any query contact to NSS Co-ordinators: Mrs. Dhara Vashi (8980776602) & Ms. Ayushi Chokshi (9265128212)**

NATIONAL SCIENCE DAY

Shree Dhanvantary Pharmacy College, Kim, Surat

Date: 28/02/2021

Time: 11:00-11:10 a.m.

Email address *

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Full Name (required in Certificate) *

Short-answer text





SHREE DHANVANTARY PHARMACY COLLEGE, KIM

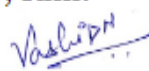
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National Science Day 2021
Certificate of Appreciation



This is to certify that *Pathan Tarannum* Student of Shree Dhanvantary Pharmacy College from *4th sem B.pharm* has participated in online Quiz competition and Score more than 70 % on National Science Day held on 28th February, 2021 at SDPC, Kim.


Mrs. Dhara Vashi
NSS Coordinator


Dr. Uttam More
Academic Head


Dr. M.N. Noolvi
Principal

Made for free with
Certify'em

Name of Event: National Science Day

Date: 28/02/2021

Day: Sunday

Time: 11.00 pm to 11.30 pm

Participated students: B.Pharm Students & Pharm. D students

Venue: SDPC Campus, Kim



Gpat qualified students

**Workshop /Seminar /FDP Attended By Faculty**

Sr no	Name of faculty	Title
1	Dr. Malleshappa N. Noolvi	1. AICTE & Parul University Sponsored Online INDUCTION/REFRESHER PROGRAMME On 'Current Trends In Drug Discovery & Formulation Development'. 18 th To 24 th March, 2021
		2. AICTE Sponsored STTP On, Future Trends in Research Methodology for Drug Discovery & Development. 8 – 13 February, 2021.
2	Meghraj suryvanshi	1.IPES Organize Webinar On, Post Effect of CoVaccine & Covoshield & Role of Pharmacist in the Management of Adverse Event Associated with Vaccines. 31 st January, 2021. 2.NLPCP Organize Conference on Theme, Nanotechnology in the Pharmaceutical Sphere; Contemporary Approaches & Therapeutic Applications. 30 th January, 2021.
3	Miss.Urvashi patel	BIOLOGICS IN HEALTHCARE 2021:UNFOLDING GENES TO PROTEINS, 4 th to 7 th February,2021
4.	DR. TANVI DESAI	Parul University & GUJCOST Sponsored, Two Days Certification Course On Patent & IPR. 5 th & 6 th February, 2021.
5.	Mr. Minesh Patel	GANPAT UNIVERSITY & SKCPR ORGANIZE WEBINAR ON, "Menstrual Health Awareness with Holistic Approach". 26th February 2021.
8.	Dr.Harshil Patel	1.NANOTECHNOLOGY AND MEDICAL SCIENCE: CHALLENGES AHEAD, 16 th January,2020 2. BIOLOGICS IN HEALTHCARE 2021: UNFOLDING GENES TO PROTEINS, 4 th to 7 th February,2021



Parul[®]
University



**AICTE-ISTE SPONSORED INDUCTION/REFRESHER PROGRAMME ON
"CURRENT TRENDS IN DRUG DISCOVERY AND FORMULATION DEVELOPMENT"**

Certificate

This is to certify that

Dr. M. N. Noolvi

In recognition of his valuable contribution as a resource speaker in
AICTE-ISTE Sponsored Online INDUCTION/REFRESHER PROGRAMME on
"Current Trends in Drug Discovery and Formulation Development"
organized by Parul Institute of Pharmacy & Research, Faculty of Pharmacy,
Parul University, during 18th to 24th March 2021.

Topic of Presentation: **Importance of Drug Design Studies In Drug Discovery**

Dr. Abhay Dharamsi
Convener

Dr. G. S. Chakraborty
Convener

Dr. Dipti Patel
Program Coordinator



**All India Council for Technical Education (AICTE), New Delhi
Sponsored**

Short Term Training Programme (STTP)

on

"Future trends in research methodology for drug discovery & development"

Organized by

Columbia Institute of Pharmacy, Tekari, Raipur, (C.G.), INDIA

(NBA accredited institute under graduate course & DST - FIST supported PG Programme)



CERTIFICATE OF APPRECIATION

This is to certify that

Dr. Noolvi Malleshappa

Professor & Principal, Shree Dhanvantary Pharmacy College, Kim, Surat, Gujarat

For sharing his valuable knowledge as a **Guest Speaker** in Short Term Training Programme on
"Future trends in research methodology for drug discovery & development" organized by
Columbia Institute of Pharmacy, Tekari, Raipur, (C.G.), from February 8-13, 2021.

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Coordinator
Dr. Shiv Shankar
Shukla

Co-Coordinator
Dr. Ravindra Kumar
Pandey



Certificate of Honour Presented To

Meghraj Suryawanshi

From Shree Dhanvantary Pharmacy College, Surat

for securing *Third Position*
in 1st IPES e-souvenir named "Call for Write up" on "Post effect of
Covaccine and Covoshield and Role of Pharmacist in the management
of adverse event associated with vaccines" organised by Indian Pharma
Educational Society (IPES), Lucknow in association with Sandip
University, School of Pharmaceutical Sciences, Nashik, (Maharashtra)
held on 31st January 2021.


Mr. Vishal Gulecha
Guest of Honour


Dr. Prashant Tiwari
Zonal President IPES


Akhilesh Pratap Mishra
President, IPES



INDIAN PHARMA EDUCATIONAL SOCIETY (IPES)
LUCKNOW, INDIA

<http://ipespharma.com/>
Email: ipespresident@gmail.com
Phone: 9161934250, 951515322

Ref. IPES/AM/AP/24

Date: 31-Jan-2021

To,

Mr. Meghraj Suryawanshi
Shree Dhanvantary Pharmacy College
Surat, India


Sub- Letter of Appreciation

Dear Sir,

I would like to thank you on behalf of the team members. Your idea for the success of the write-up entitled "Post effect of Covaxin and Covishield and Role of Pharmacist in the management of adverse event associated with vaccines" was amazing. It was expected that you would think out of the box and you proved yourself once again. We are confident in your creative abilities. Your ideas are unique, which show your ability to think quickly and finding a solution for various problems. This write-up would have been impossible without your idea. Thank you once again for being a part of this team.

We wish you good luck for your future endeavour.

Kind & Regards,


Akhilesh Pratap

Founder President
Indian Pharma Educational Society



Estd. 1947

CERTIFICATE

This is to certify that



Prof./Dr./Mr./Ms. MISS. URVASHI BHARATBHAI PATEL

has Participated as Delegate at

GSBTM-DST and ThermoFisher Sponsored International E-Conference

"BIOLOGICS IN HEALTHCARE 2021:
Unfolding Genes to Proteins"

Organized by
L. M. College of Pharmacy, Ahmedabad
during 4th to 7th February, 2021.

Dr. Mahesh T. Chhabria
Convener

Dr. Yamini D. Shah
Organizing Secretary



Department of Science & Technology
Government of Gujarat

ThermoFisher
SCIENTIFIC





**Paper publication by faculty**

Sr No.	Authors name & title of publication	Journal	Month/ Year	Volume	Page no.	DOI	Publisher /ISSN/ISB N No.	Whether Peer Reviewed/ Impact Factor
	Dr. M. N. Noolvi							
1	N. S. Khairnar, A. V. Patil, M. N. Noolvi Synthesis and biological evaluation of novel Triazolyl quinazolin-4-one derivatives as anticancer agents	European Journal of Molecular & Clinical Medicine	2021	7(11)	5201-5214		ISSN: 2515-8260	
	Dr. Manish Goyani							
1	Shikha Singh, Manish Goyani, Harshii Patel, Pinkisha Patel. Carbon nanotubes – A novel drug delivery system	Multidisciplinary International Research Journal of Gujarat Technological University	January 2021	3(1)	97-120		ISSN: 2581-8880	
	Dr. Harshil Patel							
1	Shikha Singh, Manish Goyani, Harshii Patel, Pinkisha Patel. Carbon nanotubes – A novel drug delivery system	Multidisciplinary International Research Journal of Gujarat Technological University	January 2021	3(1)	97-120		ISSN: 2581-8880	
	Ms. Sonam Gandhi							
1	Sonam M. Gandhi, Aslam K. Khan, Sachin Rathod, Rupesh Jain, Sunil K. Dubey, Debes Ray, Vinod K. Aswal, Amita Joshi, Pratap Bahadur, Sanjay Tiwari Water driven transformation of a nonionic microemulsion into liquid crystalline phase: Structural characterizations and drug release behavior	Journal of Molecular Liquids	March 2021	326	115239	0.1016/j.molliq.2020.115239 0167-7322/	Elsevier	5.065



SYNTHESIS AND BIOLOGICAL EVALUATION OF NOVEL TRIAZOLYL QUINAZOLIN-4-ONE DERIVATIVES AS ANTICANCER AGENTS

¹N. S. Khairnar, ²A. V. Patil, ³M. N. Noolvi

^{1,2}Department of Pharmaceutical Chemistry, S.S. Patil College of Pharmacy, Chopda, Dist. Jalgaon 425107, Maharashtra, India.

³Department of Pharmaceutical Chemistry, Shree Dhanvantary Pharmacy College (SDPC), Kim(E), Surat-394110 (Gujarat).
avinashay.princ@rediffmail.com

ABSTRACT

A novel series of triazolylquinazolin-4-one derivatives have been synthesized and characterized by TLC, melting point, FT-IR, ¹H NMR and mass spectroscopy data. The synthesized series of title compounds were subjected for docking studies using Schrodinger Glide software, evaluated for their potential to inhibit enzyme EGFR-tyrosine kinase followed by in-vitro anticancer activity by SRB assay method on HeLa, MCF-7, A-549 cell lines. The series of compounds shows anticancer activity probably by inhibiting the enzyme EGFR-tyrosine kinase.

KEYWORDS: Anticancer activity, EGFR, Molecular Docking, SRB assay, Synthesis, Tyrosine Kinase, triazolylQuinazolin-4-ones.

1. INTRODUCTION

Cancer is a disease category in which unregulated cells in the body form, spreading between organ and other body bodies, according to the World Health Organization (WHO). In India as well as internationally, cancer is the leading cause of death. Cancer diagnosis and care remain a significant health concern in low- and middle-income countries. In several cell phases including metabolism, cell proliferation, apoptosis, and survival, tyrosine kinases are essential. Cancer is commonly observed in all ages and gender[1]. Tyrosine kinase's overexpression triggers the development of the tumour [2]. The best approach in designing modern cancer therapies is blocking tyrosine kinases. The main targets for cancer inhibition are EGFR, VEGFR, HER2, PDGFR, mTOR, HGF, FGFR [3]. Quinazolin-4-ones have a range of pharmacological potentials, including antimicrobial, antifungal, anticonvulsant, antifungal, anti-oxidant, alpha glucosidase inhibitor[4-7]. Nitrogen, which comprises five chemicals, is known as anti-microbial, antifungal, antitumor, antiureasis and anti-bacterial [8-11]. [8-11]. In our current study, we have synthesised 9 replacements, TLC, Melting point, FT-IR, ¹H NMR and Mass spectral tests for triazolylquinazolin-4-ones. Molecular docking of synthesised compounds with EGFR protein was performed to control molecular interactions. EGFR tyrosin kinase was tested by enzymes, and the title compounds were inhibited. Synthesized compounds anti-cancer operation was also carried out by SRB research procedure on three separate cancer cell lines.

CARBON NANOTUBES – A NOVEL DRUG DELIVERY SYSTEM

Shilpa Singh
Manish Goysai
Harshil Patel
Pinkisha Patel
Shree Dhanvantary Pharmacy College, Kim, Surat, Gujarat

ABSTRACT

The carbon nanotubes (CNTs) are one of the unique and desirable discoveries within the field of nanotechnology. From their invention in the year 1991 by researcher Iijima, CNTs have been a great interest of area in many pharmaceutical and engineering fields because of their small size, lightweight, high tensile strength, and their good conductivity. CNTs are the hardest material invented by any human researcher till now; they are graphite in nature having sp^2 hybridization. They are having three classes: SWCNTs, DWCNTs, and MWCNTs based on their unique structure. CNTs are produced using different methods like the Arc discharge method, laser ablation method, and chemical vapor deposition. CNTs used in various applications because of their unique properties like mechanical, thermal, electrical and optical. They are used in applications like biomedicine, in the drug delivery system, like sensors, like implants, in tissue engineering, and in anticancer treatment.

Keywords: Carbon nanotube, Functionalization, Dispersion, Properties, Structure.

1. INTRODUCTION

In the current situation of novel drug delivery systems, carbon nanotube (CNTs) is one of the new and most promising approaches in pharmaceutical research and development. It was first explored in the year 1991 by a scientist named Iijima.^[1] CNTs are one of the members of the fullerenes group. CNTs are large molecules of pure carbon that are long, thin, tubular and cylindrical shape and having a size range between 2-3 nm. CNTs are also defined as tubular fullerene or cylindrical graphene having sp^2 hybridization carbon atoms.^[2] CNTs are having specific properties and structures and can be used in various pharmaceutical applications like cancer treatment, Drug Delivery, biosensors, biomedicine imaging as organized materials for a branch of tissue engineering. CNTs are also used in intracellular delivery of tiny drug entities, deoxyribonucleic acid, plasmids, short interfering ribonucleic acid, and proteins.^[3] CNTs are allotropes, which is having a tubular figure and prepared from graphite. They are classified into three categories, 1. Single-walled (SWCNTs), 2. Double-walled (DWCNTs) 3. Multi-walled (MWCNTs).^[4]

2. HISTORY

In the year 1952, Scientist Lulayanovich and Scientist Radushkevich bring out a research report in the "soviet scholarly diary of physical science", where he introduces carbon strands that have empty graphitic nature and having a size of around 50 nm. In the year 1979, at Pennsylvania state college, Scientist john Abrahamson offered confirmation of carbon CNT at the fourteenth biennial course of carbon. In the year 1981, a group of Soviet researchers offers the result of the synthetic and auxiliary game plan of carbon Nano strand molecule framed by a thermal catalytical lopsided of carbon monoxide (CO). At long last



Water driven transformation of a nonionic microemulsion into liquid crystalline phase: Structural characterizations and drug release behavior

Sonam M. Gandhi^{a,1}, Aslam K. Khan^{a,1}, Sachin Rathod^{a,b}, Rupesh Jain^c, Sunil K. Dubey^c, Debes Ray^d, Vinod K. Aswal^d, Amita Joshi^b, Pratap Bahadur^e, Sanjay Tiwari^{a,*}

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^b I.I.T. Pondicherry, Alwartholur 605006, Gujarat, India

^c Department of Pharmacy, Vellore Institute of Technology and Science, Vellore, Tamil Nadu 632017, India

^d Solid State Physics Division, Bhabha Atomic Research Centre, Mumbai 400085, India

^e Department of Chemistry, Vasa National South Gujarat University, Vasa 395007, India

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Keywords:

Microemulsion
In situ transformation
Paclitaxel
Liquid crystalline
Controlled release
TPGS

ABSTRACT

This study reports structural characterization of liquid crystalline (LC) phase, formed through water driven transition in a nonionic microemulsion (ME). ME was formulated with α -tocopheryl polyethylene glycol succinate (TPGS) – Span 80 (3:1) as surfactant mixture and Capex 355 (a medium chain triglyceride) as oil phase. The role of surfactant mixture was elucidated by small angle neutron scattering (SANS) experiments. SANS analyses revealed that, at a specific ratio, TPGS micelles and Span 80 vesicles interacted to form ellipsoidal nanostructures. The ME transformed to LC phase during progressive water addition. Subsequent structural changes were investigated by polarized light microscopy, differential scanning calorimetry, texture profile and rheological analysis. Transition occurred with 19–24% water addition and it was accompanied with (a) change of isotropic ME to birefringent LC phase, and (b) improvement in the rheological properties. Interestingly, the transition downshifted to 9.9% water level upon loading the oil phase with 20 mg/ml paclitaxel (PLX). LC structure remained stable at physiological temperature up to 72 h and offered controlled release of PLX under artificial sink condition. We suggest that in situ development of LC phase can be explored to create long-residing intra-muscular depot formulations.

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1. Introduction

Paclitaxel (PLX), a potent taxane isolated from *Taxus brevifolia*, is used for a number of human malignancies. It induces hyperstabilization of microtubules against depolymerization. Eventually, cell cycle arrest occurs at G₂/M₁ and G₂/M phases, especially among rapidly dividing cells [1]. Being highly hydrophobic (log *P* = 3.5), PLX is solubilized in Cremophor-EL (a polyethoxylated castor oil) – dehydrated ethanol (1:1 v/v) mixture for parenteral administration. The vehicle necessitates dilution in isotonic saline prior to dosing, but the procedure is constrained by the limited stability of resulting solution [2]. Besides, the drug administered with such formulations undergoes non-specific distribution to normal tissues and organs. Off-target distribution accounts for numerous adverse effects, including hypersensitivity reactions, neurotoxicity, nephrotoxicity, cardiotoxicity and hematotoxicity [3,4]. Adverse effects persist even after pre-medicating the subjects

with immunosuppressive and antihistaminic agents [5]. This has driven the exploration of biocompatible alternatives to solvent based approaches for PLX delivery.

Controlled delivery of PLX has been attempted through entrapment in block copolymer micelles [6], nanocapsules [7] and lipid-based liquid crystalline (LC) systems [8]. In lipid nanocapsules (LNCs), oily core is typically surrounded by some nonionic surfactant. LNCs can be converted to slow eroding hydrogels in the presence of hydrophobized drug molecules. This is accomplished through insertion of hydrophobic alkyl chain within the lipid matrix while hydrophilic drug molecule aligns with the aqueous phase. Hydrogel develops through hydrogen bonding and causes immobilization of water molecules [9]. The efficacy of such formulations can be improved through co-loading of synergistically acting drugs [10]. Nevertheless, such approaches are tedious on the account of complex synthetic and work-up procedures.

Microemulsions (ME) improve the biopharmaceutical properties of poorly water-soluble drugs. The phase behavior and solubilization potential of ME can further be modulated through the molecular structure, molar ratio and concentration of participating surfactants [11–15]. For instance, large increase in the viscosity and elasticity of the formulation can be achieved with co-solute addition [16]. Such viscoelastic transitions into lyotropic LC phase are advantageous in over-

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Zoom interface showing a presentation slide titled "Organs and Tissues for Donation" by Shatayu.

Organs and Tissues for Donation

Organs

- Heart
- Lungs
- Liver
- Kidneys
- Intestine
- Pancreas

Tissues

- Corneas
- Veins
- Heart Valves
- Bones
- Tendons
- Skin

The diagram illustrates a human figure with lines connecting to various organs and tissues: HEART, LUNGS, LIVER, KIDNEYS, INTESTINE, PANCREAS, CORNEAS, VEINS, VALVES, BONES, TENDONS, and SKIN.


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What is Brain Death?

- Brain stem death is an irreversible situation which results from a severe accidental head injury, brain hemorrhage, brain stroke.
- All areas of brain are damaged and no longer function due to which a person cannot sustain his/her own life, but vital body functions may be maintained by an artificial support system.
- This maintains circulation to vital organs long enough to facilitate organ donation.
- People who experience brain death also donate tissues.



Shatayu The Gift of Life's screen



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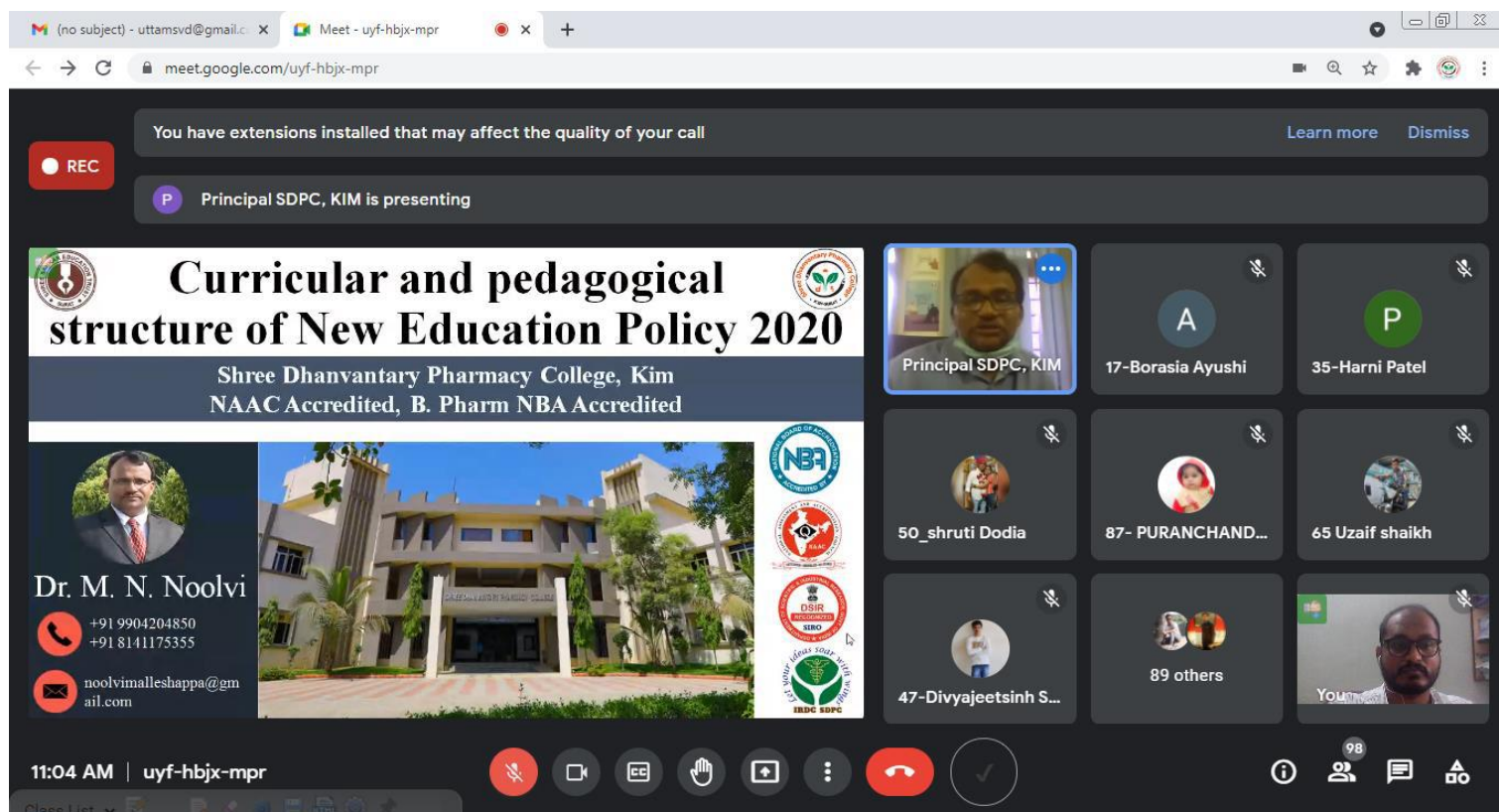
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Synthesis of Substituted -N-(5-((7-Methyl-2-Oxo-2H-Chromen-4-yl)- Methyl)-1,3,4-Thiadiazol-2-yl)-Benzamide Derivatives Using TBTU as Coupling Agent and their Evaluation for Anti Tubercular Activity

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Abstract

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Supplementary Data

Tuberculosis remains a highly infectious disease across the world. In the identification of new antitubercular agents, coumarin clubbed thiadiazole amides have been synthesized and evaluated for *in vitro* antitubercular activity. Owing to the growing concern of chemicals and their impact on the environment, greener and faster reaction conditions needed to be incorporated. Therefore, we used TBTU as a coupling reagent for efficient and facile synthesis of substituted-N-(5-((7-methyl-2-oxo-2H-chromen-4-yl)-methyl)-1,3,4-thiadiazol-2-yl)-benzamide 4a-j with good yields up to 95% in mild reaction conditions. All the synthesized compounds were evaluated *in vitro* for anti-tubercular activity against the *H37Rv* strain of *M. Tuberculosis*. Compounds 4c, 4f, and 4j were found active at 25 µg/mL against *M. tb H37Rv*. Electron withdrawing substituents present on aromatic side chains showed promising anti-tubercular activity.



Name of Faculty: Dr.Monika Kakadiya

department: Pharmaceutical chemistry

tital of book : Synthesis of Substituted -N-(5-((7-Methyl-2-Oxo-2H-Chromen-4-yl)- Methyl)-1,3,4-Thiadiazol-2-yl)-Benzamide Derivatives Using TBTU as Coupling Agent and their Evaluation for Anti Tubercular Activity

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**Workshop /Seminar /FDP Attended By Faculty**

Sr no	Name of faculty	Title
1	Ayushi Choksi	AICTE Sponsored, FDP Program On ‘Inculcating Universal Human Values in Technical Education’ 7 th To 11 th June, 2021.
2.	Dr Tanvi Desai	AICTE Sponsored, STTP Program On Scientific Research Paper, Patents and Research Proposal Writing for Grants and an Ethics” 25 th to 30 th April, 2021.
3.	Dr. Pallavi K J	AICTE Sponsored, FDP Program On ‘Inculcating Universal Human Values in Technical Education’ 21 st To 25 th June, 2021.
4.	Hirvita Bhatt	SPCE & NSS Cell Organize E-Conference On “Environment and Sustainable Development” 5 th June, 2021.
5.	Mohini Rathod	AICTE Sponsored, FDP Program On ‘Inculcating Universal Human Values in Technical Education’ 21 st To 25 th June, 2021.
6.	Meghraj Suryawanshi	AICTE Sponsored, STTP Program On “Role of Regulatory Affairs in Pharmaceutical Industry: Current Trends and Future Perspectives” 15 – 20 th May, 2021.



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Sr No.	Authors name & title of publication	Journal	Month/ Year	Volume	Page no.	DOI	Publisher /ISSN/ISB N No.	Whether Peer Reviewed/ Impact Factor
	Dr. Shushil Raut							
1	Priyanka Pandya, Shushil Y. Raut. Nanocarriers based oral lymphatic drug targeting: Startagic bioavailability enhancement approaches.	Journal of Drug Delivery Science and Technology	May 2021	64	102585	10.1016/j.jddst.2021.10.2585		IF: 2.734
	Dr. Tanvi Desai							
1	Desai Tanvi H. and Joshi Shrikant V. Anticancer effect of saponin rich fraction from helianthus annuus: an in silico and in-vitro studies	World Journal of Pharmaceutical Research	May 2021	10(6)	1479-1502	10.20959/wjpr.2021.10.20588	ISSN 2277- 7105	SJIF Impact Factor 8.084
	Mr. Meghraj Suryawanshi							
1	Meghraj Suryawanshi Review Article On: Post effects of covaxin and covishield after administration in humans	QualPharma	April 2021	4(4)				
	Mr. Minesh Patel							
1	Patel Minesh, G.S. Chakraborty A Role of Clinical Trial in Management of Hypertension and Medication of Hypertension	Research Journal of Pharmacy and Technology	June 2021	14(6)	3215-3222	10.5271/1/0974-360X.2021.00560	ISSN: 0974-3618	peer-reviewed



Journal of Drug Delivery Science and Technology

Journal homepage: www.elsevier.com/locate/jddst



Review article

Nanocarriers based oral lymphatic drug targeting: Strategic bioavailability enhancement approaches

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ARTICLE INFO

Keywords:
Lymphatic drug delivery
Peyer's patches
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ABSTRACT

In drug design, drug delivery technology facing a major problem due to degradation of the drug through the first-pass metabolism upon oral delivery. We can overcome this bioavailability-related problem by adopting the intestinal lymphatic pathway for drug delivery. Nanocarriers like lipid nanoparticles, polymeric nanoparticles, liposomes, emulsions, etc. can be used to enhance the lymphatic uptake of drugs. In the lymphatic pathway absorption of drugs takes place by endocytosis via Peyer's patches and the chylomicron uptake. Peyer's patches exhibit M-cells which represent many receptors like mannose receptors, folate receptors, claudins, integrins, transmembrane receptors, lectin receptors etc. Targeting these receptors through nanocarriers can improve the lymphatic absorption of drugs and thus improve bioavailability. Targeting drugs through the lymphatic system can treat many diseases including cancer, AIDS, tuberculosis, lymphedema, diabetes, schizophrenia, etc. Thus, by using lymphatic drug delivery systems we can improve the treatment efficacy, survival, and life expectancy of the patient. In this article, we discussed various strategies to enhance drug bioavailability through lymphatic targeting.

1. Introduction

The lymphatic system is one of the circulatory systems like the blood circulatory system. It is also known as a drainage system that presents throughout the body [1]. Lymphatic targeting can be used to address a variety of issues, including the first-pass metabolism from oral administration. Since lymph nodes play a large role in tumor metastasis, lymphatic targeting has been preferred in the treatment of cancer, AIDS, and a variety of other diseases [2]. It consists of a complicated network of tubes or channel which carries fluid known as lymph [1]. The lymphatic system consists of two main parts: (1) Lymph & (2) Lymphatic pathway. The lymphatic pathway includes capillary lymph, lymph vessel, lymph duct, and lymph organs such as lymph nodes, spleen, and thymus. It is the undirected pathway. The main function of the lymphatic system is to maintain the balance of the body's water like a blood vessel. It is very useful in the oral absorption of lipids, fats, and lipophilic drugs [3]. The lymph vessels are usually large in size than the blood vessels, the pressure in the vessels is smaller and the lymph circulation is slower. Capillaries in the lymphatic system are made up of

endothelial cells and collagenous fibers. There is no tight junction in the lymphatic walls like blood vessels that has large gaps between endothelial cells. Lymphatic capillary walls allowed small particles to enter the system [4]. The Lymph system also contributes to a number of illnesses, including lymphedema, metastasis of cancer, and multiple inflammatory disorders. Nowadays's lymphatic system is more preferable for drug delivery than the portal system, because drug agents, which could benefit from lymphatic concentration, are like anticancer chemotherapeutics and vaccines, might be designed for preferential use in the lymphatic system with reduced systemic distribution to improve efficacy. A lymphatic system has unique physiological functions in lipid absorption and particulate absorption that might be applied as an alternative route for pharmaceutical delivery to improve their bioavailability and effectiveness [5]. Fig. 1 showed detailed Uptake of nanoparticles across cell membrane Endocytosis, Phagocytosis, Pinocytosis, and receptor-mediated endocytosis.

The oral route is most acceptable and widely used for the administration of a variety of drugs. There are many advantages of the oral route over other routes. It is safe and convenient due to pain-free and self-

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**ANTICANCER EFFECT OF SAPONIN RICH FRACTION FROM
HELIANTHUS ANNUUS: AN *IN SILICO* AND *IN-VITRO* STUDIES**Desai Tanvi H.^{**} and Joshi Shrikant V.[†]^{*}Shree Dhanvantary Pharmacy College, Kim, Gujarat, India.[†]Maliba Pharmacy College, Bardoli - Surat, Gujarat.

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ABSTRACT

Objectives: Presented study was performed to explore the anticancer activity of saponin rich fraction of *Helianthus annuus* flower petals using *in silico* studies, MTT assay, shell-less chick embryo culture assay, chromosomal aberration assay and apoptosis assay. **Methods:** *In silico* studies of helianthosides (A-C) were performed for the prediction of structure based pharmacological activities using PASS Online and Swiss Target Prediction softwares for the possibilities to be anticancer and apoptogenic along with docking studies using Autodock Vina. MTT assay was executing for antiproliferative action of saponin

rich fraction on MCF-7 cells. For the evaluation of antiangiogenic properties, *in vitro* shell-less chick embryo culture assay was studied. chromosomal aberration was studied on normal human blood. Apoptosis assay was performed on MCF-7 cells using cell based ELISHA assay kit. **Result** MTT assay displayed IC₅₀ value in MCF-7 cells at 2µg/mL. Considerable (p<0.05) decreases in angiogenic parameters were observed after treatment. Non significant aberrations were noticed following the treatment. Treatment causes activation of caspase 3 and caspase 8 (OD 0.42 and 0.33 respectively at 450 nm) in MCF-7 cells. **Conclusion** Saponin rich fraction of *H. annuus* showed antiproliferative, antiangiogenic and apoptogenic potential in *in vitro* models with non significant chromosomal aberrations in normal cells.

KEYWORDS: *Helianthus annuus*, MTT assay, Antiangiogenic assay, Chromosomal aberration assay, Apoptosis assay.

INTRODUCTION

No solitary has an idea that from when and where plants were instigated to be used to treat disease, but ancient myths seems to hint its establishment from the era of Stone.^[1] There is a

POST EFFECTS OF COVAXIN AND COVISHIELD AFTER ADMINISTRATION IN HUMANS

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Very common effects (may affect more than 1 in 10 people)

- Tenderness, pain, warmth, redness, itching, swelling or bruising where the injection is given.
- Generally feeling unwell.
- Feeling tired.
- Chills or feeling feverish.
- Headache.
- Feeling sick (nausea)
- Joint pain or muscle ache.

Common effects (may affect upto 1 in 10 people)

- A lump at the injection site.
- Fever.
- Being sick (vomiting)
- Flu – like symptoms, such as high temperature, sore throat, runny nose, cough and chills.

Uncommon effects (may affect upto 1 in 100 people)

- Feeling dizzy.
- Decreased appetite.
- Abdominal pain.
- Enlarged lymph nodes.
- Excessive sweating, itchy skin or rash.

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rounds nerve fibers in your brain, optic nerves and spinal cord. They can result in neurological problems.

COVAXIN

- Injection site pain.
- Injection site swelling.
- Injection site redness.
- Injection site itching.
- Stiffening in the upper arm.
- Weakness in injection arm.
- Fatigue.
- Fever.
- Headache.
- Body ache.
- Malaise.
- Nausea.
- Weakness.
- Vomiting.
- Rashes.

It can cause severe allergic reactions very rarely after getting the dose. Signs of several allergic reactions:

- Difficulty in breathing.
- Swelling of face and throat.
- A fast heartbeat.
- Rash all over the body.
- Dizziness and weakness.

ROLE OF PHARMACIST IN MANAGEMENT OF ADVERSE EVENT ASSOCIATED WITH VACCINES

When treating patients with drug, the goal is to utilize the most effective

agent to treat a condition while minimizing hazards of therapy. These hazards are usually known as adverse drug reactions (ADRs). WHO defined ADRs as unintended and undesired harmful effects of agents administered at doses normally used in humans for diagnostic, prophylactic, therapeutic use or for the modification of the physiological function? Thus, careful therapy monitoring by pharmacists can result in detection of drug-induced illness and in many instances, these diseases can be prevented. Pharmacists have a significant duty to report ADRs to drug authority.

About 65% of reported ADRs include minor GIT disturbances, rash, itching, drowsiness, insomnia, weakness, headache, muscle twitching, or fever. The majority of ADRs has resulted from pharmacologic effects of drugs and has usually been well-known toxic side effects. Thus, more careful drug prescribing, dose selection and more effective drug monitoring can prevent numerous reactions experienced by the patients. Non-compliance, inadequate therapy, drug misuse, and drug overdose accounts for about 15% of the ADRs.

Pharmacists should be aware of the potential for a severe allergic reaction and have the necessary items on hand if a severe allergic reaction occurs.

In addition

- They should be aware of nursing home protocols for emergency care for residents with a severe allergic reaction.
- Have epinephrine available if needed.



Meghraj Vivekanand Suryawanshi
(M. Pharm, PDCR, MBA, Ph.D.),
1. Ph.D. Research Scholar in Pharmaceutical Science, School of Pharmaceutical Sciences, at Jaipur National University, Jaipur
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REVIEW ARTICLE

A Role of Clinical Trial in Management of Hypertension and Medication of Hypertension

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ABSTRACT:

Clinical trials are essence for the progress of new treatments. Whether a person should engage confide in on their compassionate of the liability and gain for themselves and for society as an entity. Clinical trials are research review in which people volunteer to attempt major treatments, interventions or experiment as a means to forbid, detect, evaluate or manage assorted diseases or medical conditions. Some investigations glance at how people react to a new arbitration and what side effects valor occur. Every new medicine and treatment initiated with volunteers engage in clinical trials. We incur our present high ideal of medical care to studies that have been operate in the past under guidance of the INDIAN Food and Drug Administration (FDA). In addition to Research on new drugs and devices, clinical trials bring a scientific footing for urge and treating patients. Even when researchers do not achieve the conclusion they anticipate; trial results can help point scientists in the mend direction. Blood pressure is great because the larger than your blood pressure is, the larger than your risk of health problems in the future. If your blood pressure is higher than it is putting extra ache on your arteries and on your heart. High blood pressure clouts your heart to work higher to pump blood to the comfort of your body. This causes part of your heart (left ventricle) to congeal. A congeal left ventricle high your risk of heart attack, heart failure and sudden cardiac death. Heart failure. The arena for clinical trials of hypertension management is in transition. The stage of mega trials may not be bygone but is assuredly in decline. Incremental growth in the therapies assessable in the face of a high global disease hardship has imply that hypertension researchers have also attract on getting best efficacy and value from the available treatments through arrangement improvement, combinations, and algorithms. There has been go on amuse in the role of nonpharmacological compute in cure and management of hypertension.

KEYWORDS: Hypertension, trials, guidelines, Blood pressure, good clinical practices.

INTRODUCTION:

High blood pressure endures a crucial global disease of cardiovascular anguish and mortality. Scheme for evaluate hypertension go on to derive as new illustrate becomes applicable from clinical drug trials or Conclusion studies on hypertension treatment. As new hypertension codes become available, the quiver of these trials become conspicuous from changes in the sanction of treatment, option of drugs, options of treatment in like situations and ambition of therapy.

The treatment of hypertension goes on to derive and although some ambition for hypertension treatment from planted on consensus, important are dependant on clue from large on clinical drug trials or review studies. The control of hypertension was making approximately 38 years ago and were frequently new as new data and clue on hypertension treatment or diagnosis and pathophysiology incline available¹.

Hypertension, the dominant risk factor for cardiovascular disease, arise from both genetic, environmental, and civil determinants. Environmental factors consist of overweight/obesity, unhealthy diet, enormous dietary sodium, meager dietary potassium, scant physical actions, and misuse of alcohol. avoidance and domination of hypertension can be got through spotted and/or population-based blueprint. For control of

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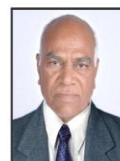
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Independence Day Celebration and Tree Plantation Programme





Event: Independence Day

Date: 15/08/2021

Day: Sunday

Time: 8.30 am to 10.00 am

Participants: Pharm D. And B.Pharm Student, Shree Dhanvantary School students, Shree Dhanvantary Diploma engineering Students, All Teaching and Non-Teaching Staff

Venue: SDPC Campus, Kim & Online platform

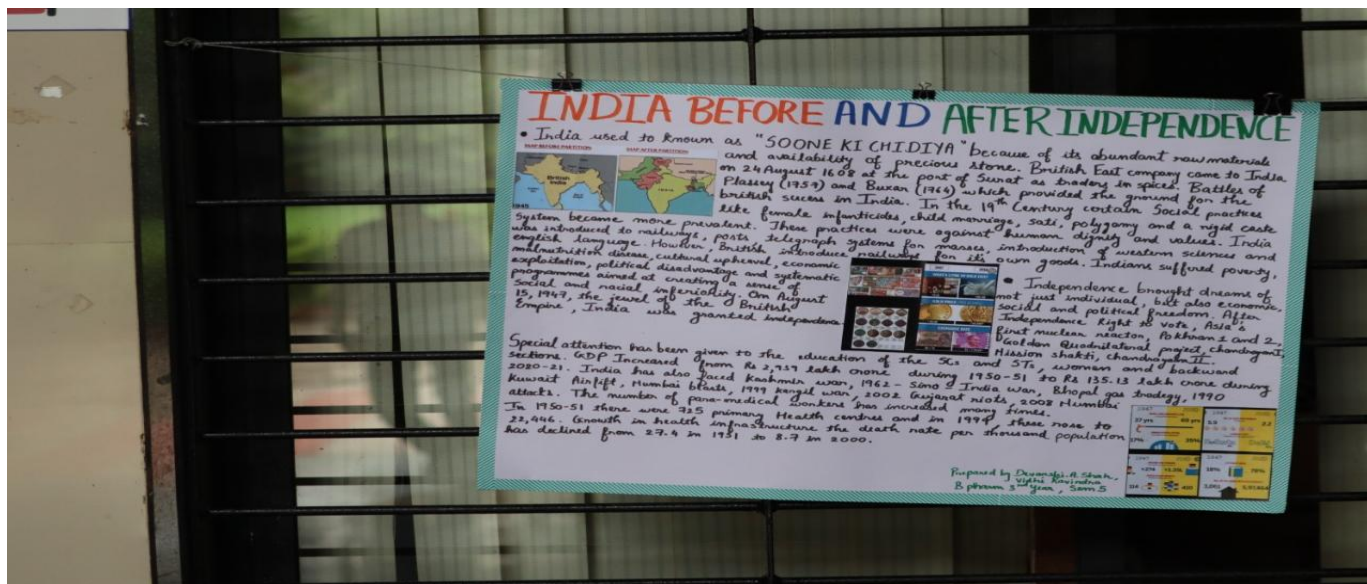
Description of Event: Independence Day was celebrated with great enthusiasm and patriotic fervour on 15th August, 2021 in the SDPC Campus & on Google meet platform (online) with students and parents to mark the 75 year of freedom from the British rule. On this special occasion, Special guest are also invited. Their names are Dr. C.D Shelet, Deputy Commissioner FDCA, Gujarat and Dr. J.B Parmar, Retired Assistant Commissioner, FDCA, Gujarat.

The programme started with flag hoisting by the Principals of all Colleges, School and Special Guest. The Principal of Pharmacy College Dr. M.N Noolvi addressed the gathering appealing to their nationalistic spirit and urging them to take pride in being an Indian and fulfilling one's duty with responsibility. Special Guests also addressed to students. The programme was ended by Planting Trees by Staff members and Special Guests in College Garden.



Azadi Ka Amrut Mahotsav & Teacher's Day Celebration







Name of event : Azadi Ka Amrut Mahotsav & Teacher's day

Name of participants or semester/department: B. Pharm and Pharm.D students

Date : 6th September, 2021

Time: 08:00 AM TO 3:00 PM



Ganesh Chaturthi Celebration





Event: GANESH CHATURTHI

Date: 10/09/2021 – 16/09/2021

Day: FRIDAY

Time: 10:00 am

Participants: Pharm D. And B.Pharm Student, All Teaching and Non-Teaching Staff

Venue: SDPC Campus, Kim

Description of Event: Ganesh chaturthi was celebrated with great enthusiasm and spirituality from 10-sept'2021 to 16 sept' 2021 in the SDPC Campus with students .On this special occasion, Dr.M.N.Noolvi was present.

The programme started with band by the final year students. Programmed begins with Ganesh Pooja followed by aarti. On the last day there was bhajan organized by Ayush Maisuriya, student of final year b.pharm.



Pharmacy Week Celebration







Name of event : Pharmacy week celebration

Name of participants or semester/department: Pharm D and B.Pharm Student,

Date : 27th September 2021 to 1st October 2021



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Name of event : Webinar On Pocket Money Management

Name of participants or semester/department: Pharm D and B.Pharm Student,

Date : 23rd of July 2021

Time: 10.30PM-11.30PM



Webinar On “Importance Of Professional Training And Readiness For Successful Industrial Placement



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- What are the advantages of it?
- How actually placement happens?

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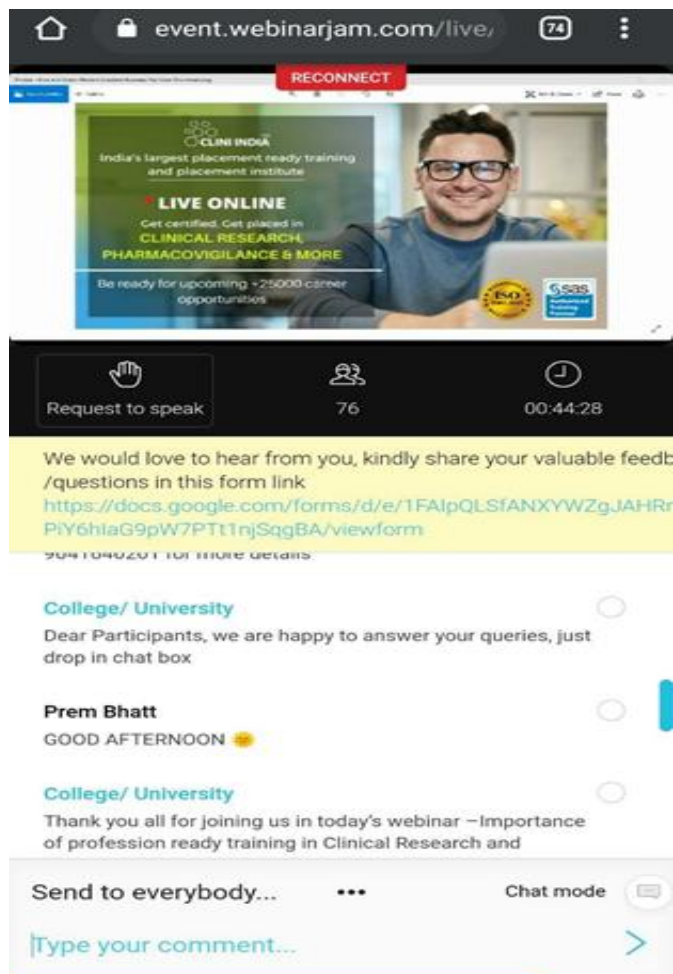
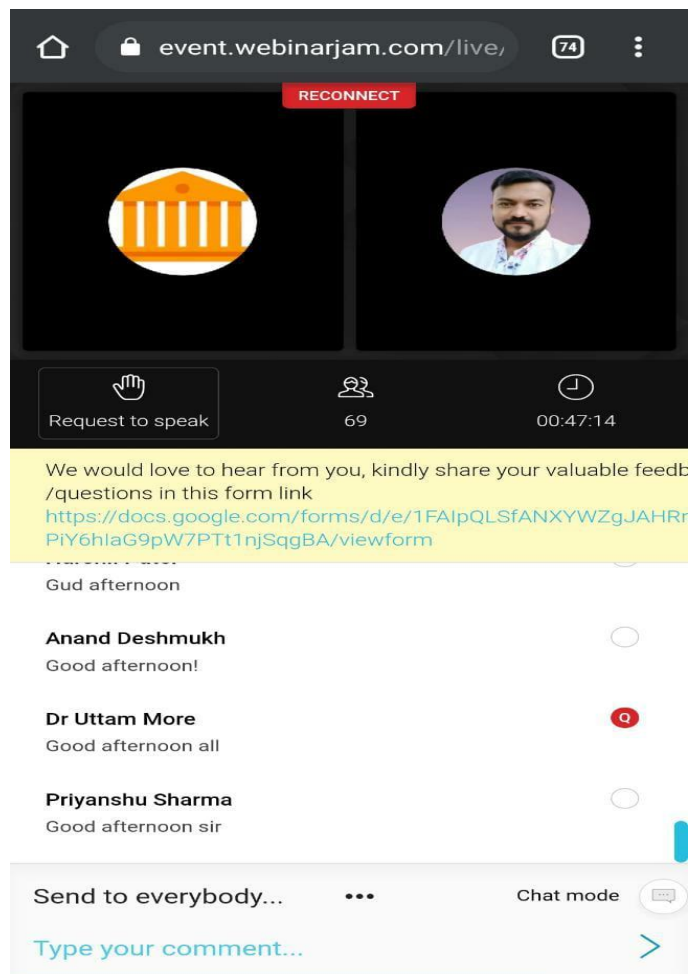
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(Kindly join 10 min early)

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(Kindly note that you will get an individual joining link on your mentioned email id immediately after registration. Find the joining link on the registered email inbox (spam/updates/promotion) and join the webinar on the given schedule.



Name of event : Webinar on “Importance of professional Training and readiness for successful Industrial placement

Name of participants or semester/department: Pharm D and B.Pharm Student,

Date : 11th of September 2021,

Time: 1.00PM-02.00PM

Mode: online mode webinar jam platform

Book Published

In present work attempts have been made to formulate solid dispersion of Glibenclamide, by PEG 6000 and PVP K30, which is used as Antidiabetic agent in case of type II diabetes. Solid dispersion were prepared using polymer with PEG 6000 and PVP K30 in different ratio (1:1, 1:5, 1:10) by physical mixture, co-evaporation and melting method. In-vitro dissolution were carried out by keep in the phosphate buffer (pH 7.2) at interval of 4 hr for solid dispersion of different ratio (i.e. 1:1, 1:5, 1:10) & three different methods and results were good dissolution for solid dispersion by co-evaporation, method (CE 1:10) found to be (97.14%). The compatibility evaluations were performed by FTIR spectroscopy and DSC analysis. Both studies implies that the drug and polymers are compatible with each other. Assay were carried out for finally selected solid dispersion and the result were found to be 99.04% by UV Spectrophotometer. Stability studies were carried out by keeping the solid dispersion (CE 1:10) at room temperature and at a 40°C + 20°C / 75 + 5% RH (stability chambers) for 90 days results showing no change in physical appearance and invitro dissolution profile.



Manish Goyani
Shreya Goyani



I, Dr. Manish Goyani working as a Professor, in Shree Dhanvantary pharmacy college, Kim, Surat. I received total 11 lakhs grants from Various government agencies. I published 33 papers in various national as well as international Journals. I attended 37 national as well as international conferences, workshop and FDP. I guided total 30 PG Students.



Formulation of Glibenclamide Solid dispersion

Solid dispersion using different polymers



Name of Faculty: Dr. Manish Goyani

department: Pharmaceutics

Tital of book : Formulation of Glibenclamide Solid Dispersion.

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Paper Publication By Faculty

Sr. no.	Name of authors	Title of publications	Volume; issue, page no.	Year of publication	Name of Journal with Publisher
1.	Malleshappa Noolvi Matin Shaikh, Yashodeep Shinde, Rahul Pawara, , Sanjay Surana, Iqar Ahmad, Harun Patel	Emerging Approaches to Overcome Acquired Drug Resistance Obstacles to Osimertinib in Non-Small-Cell Lung Cancer	Volume 65 Issue 2 2021 2021/7/29	2021	Journal of Medicinal Chemistry ACS
	Noolvi, Malleshappa N.; Avvaru, Stephen P.; More, Uttam A.; Chakraborty, Sudipta; Dash, Ashutosh; Aminabhavi, Tejraj M.; Narayan, Kumar P.; Sutariya, Vishnu	Synthesis and Anticancer Activity of Thiadiazole Containing Thiourea, Benzothiazole and Imidazo[2,1-b][1,3,4]thiadiazole Scaffolds	Volume 17, Number 7, 2021, pp. 750-765(16)	2021	Medicinal Chemistry, Bentham Science
2.	Dr. Tanvi Desai Desai Tanvi, Joshi Shrikant.	In silico Anticancer activity and Caspase targeted study of Saponin rich fraction extracted from Caralluma fimbriata (Wall).	Volume 12(2), 338-346	July 2021	International Journal of Ayurvedic Medicine
3.	Mr. Meghraj Survanshi Foram Kamlesh Kumar Shethia, Meghraj Vivekanand Suryawanshi, Indermeet Singh Anand	Prevalence of Antimicrobial Resistance Pattern in Tertiary Care Hospital: A Prospective Observational Stud	Volume 10(1-2),1-17	July 2021	International Journal for Pharmaceutical Research Scholars
4.	Patel Minesh	A review on importance of artificial intelligence in parkinson's disease & it's future outcomes for parkinson's disease	Volume 9/9, 142-147	September 2021	International Journal of Advanced Research

Emerging Approaches to Overcome Acquired Drug Resistance Obstacles to Osimertinib in Non-Small-Cell Lung Cancer

Matin Shaikh, Yashodeep Shinde, Rahul Pawara, Malleshappa Noolvi, Sanjay Surana, Iqar Ahmad,*
and Harun Patel*

Cite This: <https://doi.org/10.1021/acs.jmedchem.1c00876>

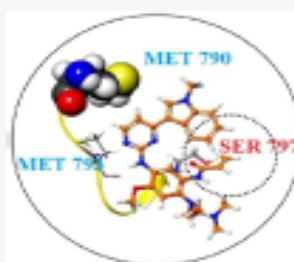
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ABSTRACT: The pyrimidine core-containing compound Osimertinib is the only epidermal growth factor receptor tyrosine kinase inhibitor (EGFR-TKI) from the third generation that has been approved by the U.S. Food and Drug Administration to target threonine 790 methionine (T790M) resistance while sparing the wild-type epidermal growth factor receptor (WT EGFR). It is nearly 200-fold more selective toward the mutant EGFR as compared to the WT EGFR. A tertiary cysteine 797 to serine 797 (C797S) mutation in the EGFR kinase domain has hampered Osimertinib treatment in patients with advanced EGFR-mutated non-small-cell lung cancer (NSCLC). This C797S mutation is presumed to induce a tertiary-acquired resistance to all current reversible and irreversible EGFR TKIs. This review summarizes the molecular mechanisms of resistance to Osimertinib as well as different strategies for overcoming the EGFR-dependent and EGFR-independent mechanisms of resistance, new challenges, and a future direction.



1. INTRODUCTION

On March 30, 2017, the US Food and Drug Administration (FDA) conceded regular approval to Osimertinib (AZD9291) for the management of patients with metastatic "EGFR-T790M Non-Small Cell Lung Cancer (NSCLC)".^{1,2} The FDA-approved drug Osimertinib is at the forefront for the treatment of NSCLC patients (Figure 1).^{3–5} However, a significant proportion of Osimertinib-treated patients developed the EGFR kinase tertiary cysteine 797 to serine 797 (C797S) mutation by the loss of covalent binding with the Cys797 residue, which renders a resistance to all the existing drugs.^{6,7} Additional studies with mutant cell lines have shown that the allelic context of the activating gatekeeper and C797S mutations affects the sensitivity of these generations of EGFR inhibitors, with no epidermal growth factor receptor tyrosine kinase inhibitor (EGFR-TKIs) alone or in combination able to suppress activity when the mutation is in the cis-form.^{8–10} These data suggest that there is a pressing need for drugs that can overcome the tertiary mutation (L858R/T790M/C797S EGFR) obstacle in NSCLC.¹¹ The crystallographic structure of C797S-EGFR revealed that the C797S mutation has no effect on the EGFR kinase's structure or function but does increase the degree of local hydrophobicity around residue 797 (Figure 2).^{12–14}

The EGFR-independent pathway also contributes to the resistance to Osimertinib in addition to the acquired C797S mutation.^{15,16} The EGFR-independent pathway (bypass pathway) is ascribed to the modification of other signaling molecules, such as MET amplification, MEK activation, ALK

activation, FGFR amplification, HER2 amplification, AKT activation, BRAF activation, and AXL activation.^{17,18} The tertiary undruggable C797S mutation in the EGFR kinase domain, which causes more than 20% of the incidence rate in clinical trials, is the most difficult to deal with of all these potential mechanisms.^{19–21} The focus of this review is to provide an exhaustive overview of Osimertinib resistance mechanisms and use the available information to develop potential strategies to overcome the associated resistance problem.

2. EGFR-MEDIATED SIGNALING PATHWAYS IN NSCLC

Different growth factors, cytokines, and hormones bind to the receptor tyrosine kinases (RTKs). Structurally, RTKs consist of the ligand-binding extracellular domain, the hydrophobic transmembrane domain, and the intracellular protein tyrosine kinase region.²² Therefore, intracellular pathways that signal EGFR play a major role in various cancers, specifically NSCLC. The binding of a ligand (growth factor) to the EGFR extracellular domain causes dimerization, which subsequently activates the cytoplasmic tyrosine kinase domain

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Source: Medicinal Chemistry, Volume 17, Number 7, 2021, pp. 750-765(16)

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Abstract



References



Citations



Supplementary Data

Background: A great array of nitrogen-containing heterocyclic rings were being extensively explored for their functional versatility in the field of medicine, especially in anticancer research. 1,3,4- thiadiazole is one of such heterocyclic rings with promising anticancer activity against several cancer cell lines, inhibiting diverse biological targets.

Introduction: The 1,3,4-thiadiazole, when equipped with other heterocyclic scaffolds, has displayed enhanced anticancer properties. The thiourea, benzothiazole, imidazo[2,1,b][1,3,4]-thiadiazoles are such potential scaffolds



In silico Anticancer activity and Caspase targeted study of Saponin rich fraction extracted from *Caralluma fimbriata* (Wall).

Research Article

Desai Tanvi^{1*}, Joshi Shrikant²

1. Assistant Professor, Department of Pharmacology, Shree Dhanvantary Pharmacy College, Kim, Gujarat.

2. Associate Professor, Department of Pharmacology, Maliba Pharmacy College, Bardoli, Gujarat.

Abstract

Caralluma fimbriata (Wall.) (Asclepiadaceae), is mentioned as vegetable in Indian Materia Medica and an affluent resource of saponins. It is reported in conventional medicine method of India as well as Arabia that *C. fimbriata* was extensively used for cancer treatment. Current study was planned to assess anticancer potential of saponin rich fraction from *C. fimbriata* using *in silico* and *in vitro* assays. Caratubersides A-G, a pregnane glycosides found in *C. fimbriata* were taken for *in silico* examination and processed through PASS Online software for the prediction of structure dependent pharmacological actions. Docking was carried out using Autodock Tool and Autodock Vina, revealed antineoplastic action of caratubersides along with apoptogenic potential. MTT assay was performed on MCF-7 cell line. Shell less chicken embryo culture assay was done for anti-angiogenic properties at different concentrations (1.5 µg/ml, 3 µg/ml, and 6 µg/ml). Chromosomal aberrations assay was carried out in cultured human blood. And apoptogenic potential was estimated on MCF-7 cells using cleaved caspases 3 and caspase 8 cell based ELISA assay kit. Results of study showed that IC₅₀ of saponin rich fraction of *C. fimbriata* was at 3 µg/mL. Considerable ($p < 0.05$) decreases were observed in angiogenic properties. Insignificant chromosomal aberrations were found in normal cells. Treatment of saponin rich part improved levels of caspases 3 as well as caspase 8 (ODs 1.35 and 1.68 respectively). From the study, saponin rich portion obtained from *C. fimbriata* displayed antiproliferative, anti-angiogenic actions along with apoptogenic prospective and no significant chromosomal aberrations were found in normal human cells.

Key Words: *Caralluma fimbriata*, In silico, MTT assay, Angiogenesis, Chromosomal Aberrations assay, Apoptosis.

Introduction

Upturge in numbers of deaths related to cancer along with unfavourable and deadly side effects of cancer treatments like radiation and chemotherapy, the interest in searching for novel cancer treating agents, especially of plants origin, is on rise (1). *C. fimbriata* has synonym *Caralluma ascendens* is a widespread, juicy cactus as well as feral remedial plant belongs to Asclepiadaceae family (2). In Western India it is also called Shindula makadi, Makad shenguli, Kullimundayan, and Ranshabar (3). The plant is widely found in Africa, India, the Canary Islands, Southern Europe and Arabia (4).

C. fimbriata is marked as a hunger suppressant, vegetable and thirst quencher in Indian Materia Medica and grow as an arid herb in waterless places of India (5). *C. fimbriata* is also used to make boundaries around gardens. Plant is also used to make chutneys and pickles in numerous centuries (6). *C. fimbriata* is reported as an

antibesogenic agent and metabolic regulator (7). It is considered to be "famine food" which repress hunger and satisfy thirst. It is a "portable food" which prevents starvation in period of frantic requirement of food while travelling (8). *C. fimbriata* is safe and utilized conventionally for treating paralysis, rheumatic disorders, inflammation and diabetes along with leprosy. It showed antimalarial, antiproliferative, antiulcer, antinociceptive, antitypanosomal, antioxidant activities, antihyperglycaemic, hypolipidaemic and hepatoprotective activity (9, 10). Devi and her friends in 2016 reported that the plant is extensively useful in the Indian traditional medication system for anticancer activity (11). Qayyum in 2018 reported that traditionally *Caralluma* species used for cancer treatment (12). Zari and his colleagues 2018 reported that in the Indian and Arabic traditional medicine *Caralluma* species are used in the cancer therapy (13). Earlier Shenai et al., observed that ethanolic extract of *C. fimbriata* leaves having cytotoxicity in COLO 320 cells (1). Also Al-Faifi investigated *in vitro* antiproliferative action of *Caralluma* spp. in HEPG2 and MCF-7 cell lines (14).

C. fimbriata is a rich source of pregnane glycosides, megastigmane glycosides, steroidal glycosides, saponins, flavonoids and flavone glycosides (15), pregnane steroids, hexadecanoic acid, oleic acid, aromatic and nonaromatic bitter principles, alkaloids, unsaturated and saturated hydrocarbons, volatile

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REVIEW ARTICLE

Prevalence of Antimicrobial Resistance Pattern in Tertiary Care Hospital: A Prospective Observational Study

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ABSTRACT

To check the prevalence of Antimicrobial Resistance Pattern in Tertiary Care Hospital. It was a single centric prospective observational study. This study collected the data of 250 samples, in patients who were admitted to in-patient department and in whom at least one antibiotic was prescribed. The data such as patient demographics, diagnosis, the laboratory data such as count of White Blood Cells (WBC), C- Reactive Protein (CRP) and Procalcitonin (PCT). The culture sensitivity reports were collected from the Microbiology Department of the hospital. The positive samples were further evaluated for the study. Statistical analysis is done by using Microsoft Excel 2007. In this present study, out of 250 samples, 87 (35%) samples were positive. The most common specimen which had shown highest growth was Tracheal (38%), followed by Blood sample (21%) and third was Urine (15%). The most common organisms which were found to be resistant included *Klebsiella Pneumoniae* (24%), *Acinetobacter Baumannii* (21%), *Pseudomonas Aeruginosa* (18.39%) and *E Coli* (11.50%). The maximum resistance was shown by five groups viz, carbapenem (54%), fluoroquinolones (46%), penicillins (45.51%), cephalosporin (37.12%) and aminoglycosides (33.51%). According to antibiogram, all of these four bacteria had shown highest resistance against fluoroquinolones. The results obtained from this study can guide rationale use of antibiotics which can contribute to effective application of Antimicrobial Stewardship Program. Antimicrobial resistance, Tertiary care hospital, sample, bacteria, Antimicrobial Stewardship Program.

KEYWORDS

Antimicrobial resistance, Tertiary care hospital, sample, bacteria, Antimicrobial Stewardship Program

INTRODUCTION


When micro-organism such as bacteria, viruses,

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fungi and parasites changes over the period of time and also they no longer respond to the treatment leading to infections difficult to treat, which results in the increasing the spread of infection, the severe illness and death, it is when Antimicrobial Resistance (AMR) occurs.

This leads to the drug resistance, this decreases the effectiveness of the antibiotics and other antimicrobial medicines, therefore leading to difficulty in treating the infection and either



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RESEARCH ARTICLE**A REVIEW ON IMPORTANCE OF ARTIFICIAL INTELLIGENCE IN PARKINSON'S DISEASE & IT'S FUTURE OUTCOMES FOR PARKINSON'S DISEASE****Patel Minesh**

Assistant Professor, Department of Pharmacology, Shree Dhanvantary Pharmacy College, Kim, Gujarat

Manuscript Info**Manuscript History**

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Key words:-

Parkinson's Disease, Artificial Intelligence, Medical Terminology, AI Outcomes

Abstract

Over the century's, increasingly sophisticated tools have been developed to serve humanity. In many ways, digital computers are just another tool. You can perform the same number and symbol operations as ordinary people, but it is faster and more reliable. This article provides an overview of artificial intelligence algorithms used in computer programs and applications. It includes knowledge-based systems; the computational intelligence that leads to artificial intelligence is the science of imitating human intelligence on computers. This will help doctors perform dissections when making a medical diagnosis. Use a data-driven final data approach to determine the existence molecule, Machine Learning and natural sources of Parkinson's disease (PD) subtypes. There are two large groups of independently newly diagnosed patients. Parkinson's disease (PD) causes difficulty in hand movement, which has been treated in multiple studies. The methods are used at the same time. The treatment of Parkinson's disease is an evolving field, indicating new treatments and improvements over old methods. Pharmacology, surgery and treatment methods. Specific patient problems that arise.

*Copy Right, IJAR, 2021,. All rights reserved.***Introduction:-**

Computational intelligence is going a few manners to conquer those problems via way of means of permitting the pc to accumulate its personal model, primarily based totally on observations and experience. Here the understanding isn't explicitly said however is represented via way of means of numbers which are adjusted because the gadget improves its accuracy. This class consists of neural networks, genetic algorithms, and different optimization algorithms, in addition to strategies for managing uncertainty, including fuzzy logic. Parkinson's disorder (PD) is a revolutionary neurodegenerative sickness characterised via way of means of a huge variety of motor and non-motor features, for which there may be no acknowledged cure & Specific Therapeutics. Therapeutic techniques would possibly quickly be to be had with extended advantages that would have an effect on the underlying pathogenesis, and subsequently postpone or in the end save you the inexorable direction of this disorder. To date, not one of the sixteen tablets evaluated for PD disorder change have succeeded in section III trials, with a similarly 8 compounds presently withinside the discovery pipeline. PD is an inherently complicated sickness with acknowledged heterogeneity in phrases of scientific presentation in addition to the price of development and danger of disorder complications. The foundation for that is most effective now beginning to be understood, in phrases of the position of genetic factors, for example, glucocerebrosidase gene mutations. The implications for destiny scientific trial

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SDPC

E-BULLETIN

oct-dec 2021

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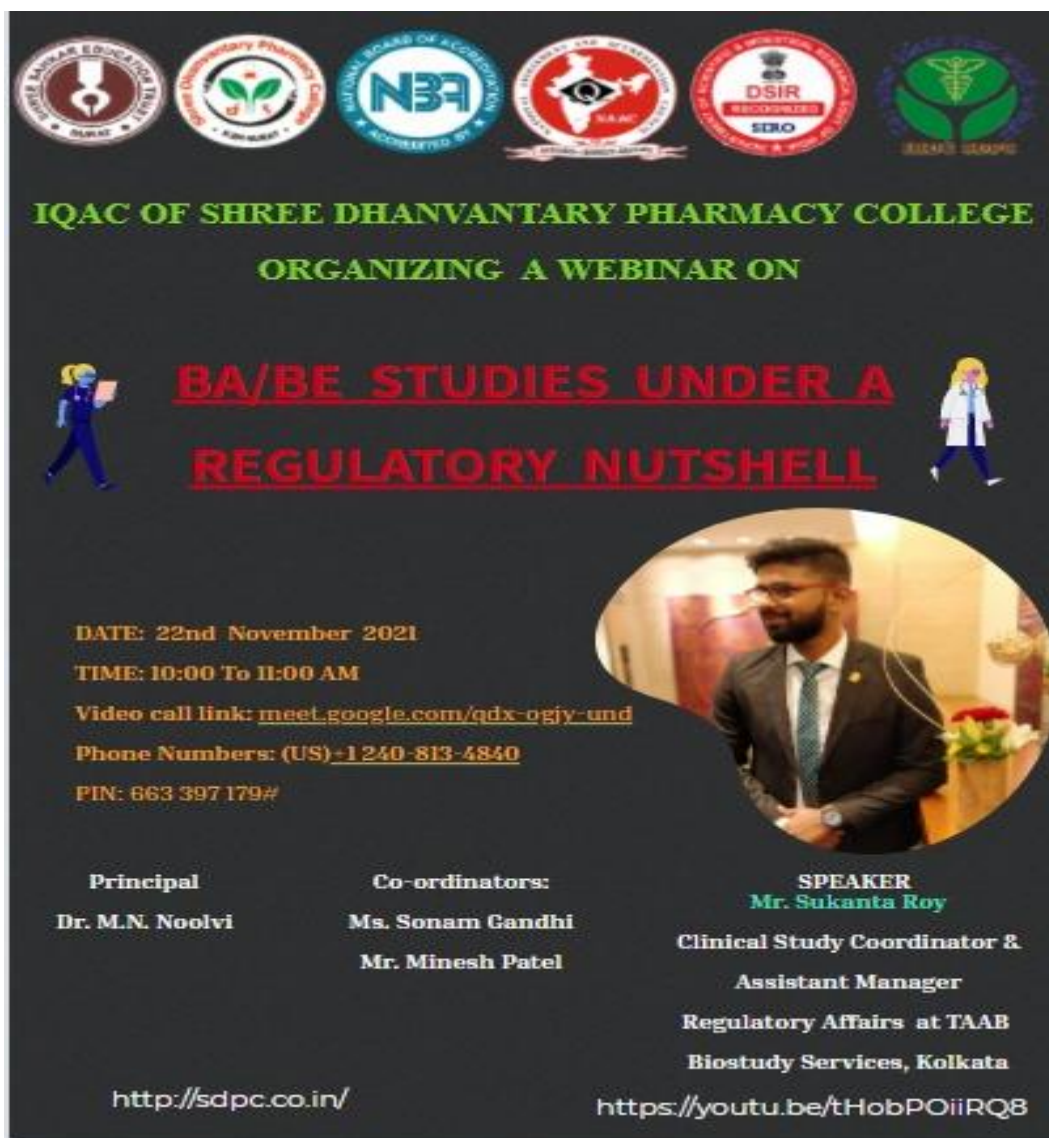


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Webinar on “BA/BE Studies



The poster features a dark background with a row of six accreditation logos at the top: Shree Dhantvartary Pharmacy College, All India Institute of Pharmaceutical Education, National Board of Accreditation (NBA), National Society of Accreditation (NSA), Drug Safety Research Institute (DSIR), and Shree Dhantvartary Pharmacy College. Below the logos, the text reads: "IQAC OF SHREE DHANVANTARY PHARMACY COLLEGE ORGANIZING A WEBINAR ON". The main title is "BA/BE STUDIES UNDER A REGULATORY NUTSHELL" in large, bold, red letters, flanked by two cartoon characters of a person in a lab coat. Below the title, the date and time are listed: "DATE: 22nd November 2021" and "TIME: 10:00 To 11:00 AM". The video call link is "meet.google.com/qdx-ogjy-und" and the phone numbers are "(US) +1 240-813-4840" and "PIN: 663 397 179#". A circular inset photo shows a man in a suit and tie speaking into a microphone. Below the photo, the roles and names of the organizers and speaker are listed: Principal Dr. M.N. Noolvi, Co-ordinators Ms. Sonam Gandhi and Mr. Minesh Patel, and Speaker Mr. Sukanta Roy, Clinical Study Coordinator & Assistant Manager Regulatory Affairs at TAAB Biostudy Services, Kolkata. The website "http://sdpc.co.in/" and the YouTube link "https://youtu.be/tHobPOiiRQ8" are also provided.

**IQAC OF SHREE DHANVANTARY PHARMACY COLLEGE
ORGANIZING A WEBINAR ON**

**BA/BE STUDIES UNDER A
REGULATORY NUTSHELL**

DATE: 22nd November 2021
TIME: 10:00 To 11:00 AM
Video call link: meet.google.com/qdx-ogjy-und
Phone Numbers: (US) +1 240-813-4840
PIN: 663 397 179#

Principal
Dr. M.N. Noolvi

Co-ordinators:
Ms. Sonam Gandhi
Mr. Minesh Patel

SPEAKER
Mr. Sukanta Roy
Clinical Study Coordinator &
Assistant Manager
Regulatory Affairs at TAAB
Biostudy Services, Kolkata

<http://sdpc.co.in/>
<https://youtu.be/tHobPOiiRQ8>



Introduction

- The comparison of two drug products (Test & Reference or Innovators) based on the evaluation of PK parameters like C_{max} , T_{max} , $T_{1/2}$, AUC, $AUC_{0-\infty}$, k_{el} , etc.
- BE study has to be carried out for
 - ✓ Development of suitable dosage form for a New Drug Entity,
 - ✓ Determination of influence of excipients, patient related factors & possible interactions with other drugs.
 - ✓ Development of new drug formulations of existing drugs.
 - ✓ Control of quality of drug products, influence of → processing factors, storage & stability.
 - ✓ Comparison of availability of a drug substance from different form or same dosage form produced by different manufacturers.
 - ✓ The new drugs which has been come to India with in 4 years as per CDSCO-approval.

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03 AM | BA/BE STUDIES UNDER A REGULATORY NUTSHELL

Sukanta Roy

Mili Bulsari

Salomi Lokhande

32 others

Name of event : Webinar on “BA/BE Studies

Name of participants or semester/department: Pharm D and B.Pharm Student, Faculty members

Date : 22nd of November 2021

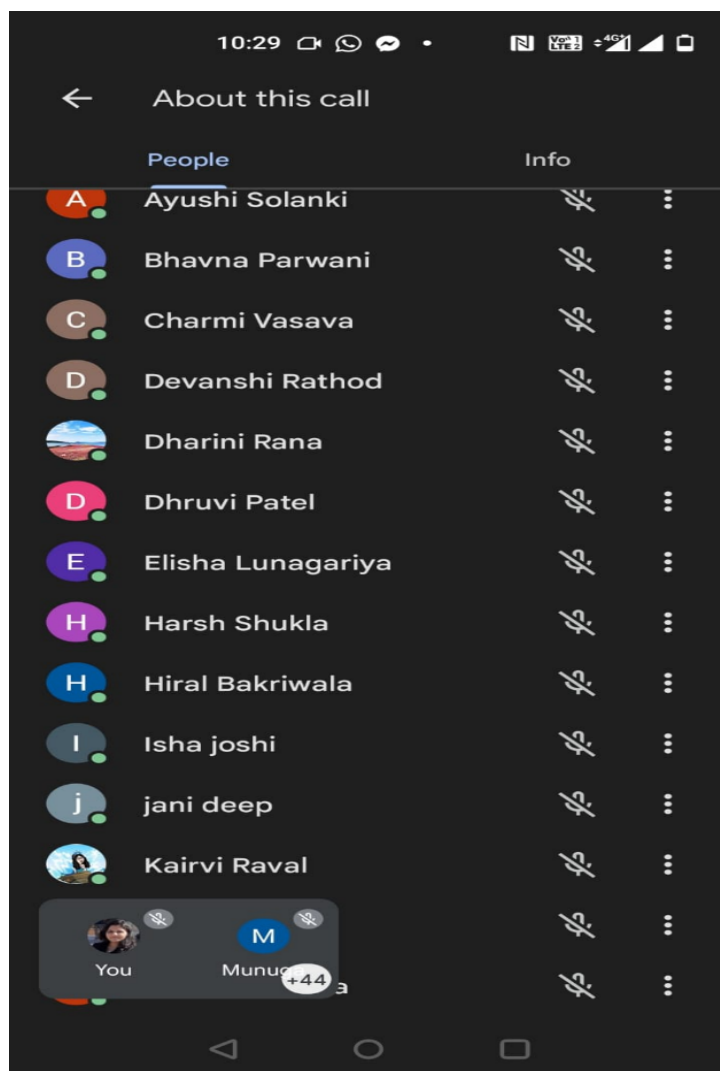
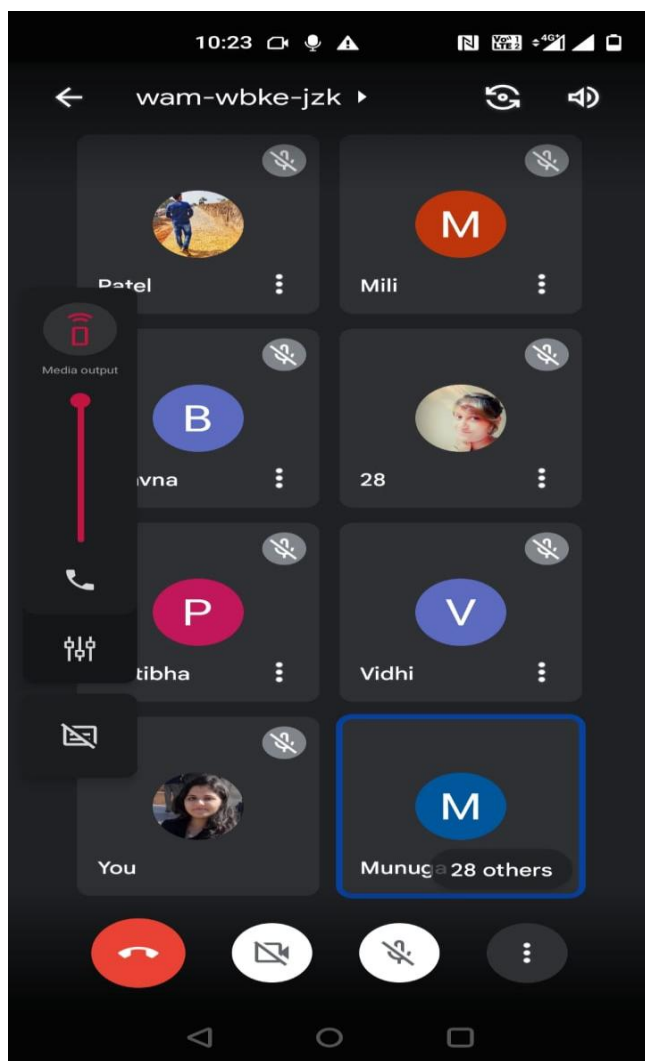
Time: 10.00aM-11.00aM

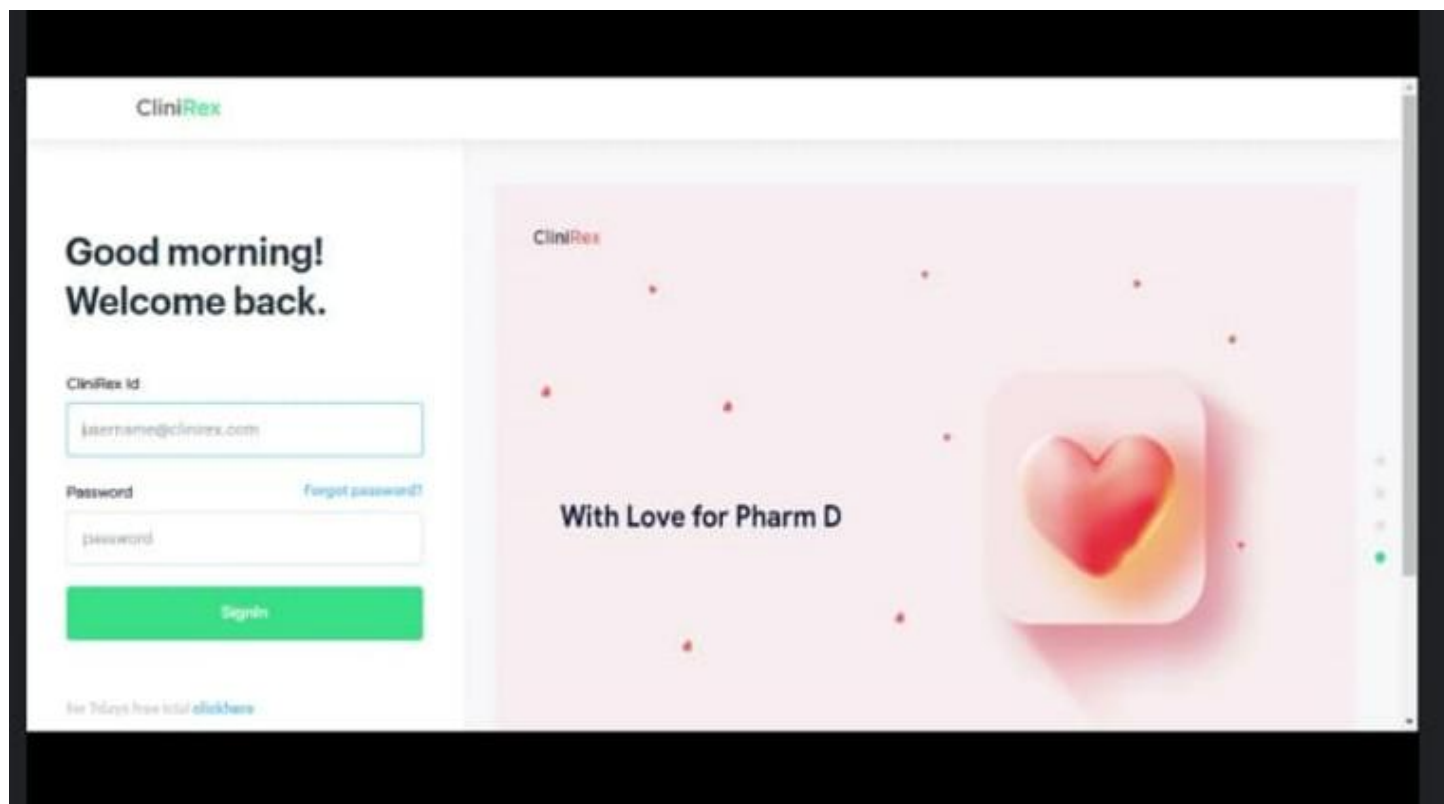
Mode : online

Platform :Google Meet



Webinar on “Demo Installation of Clinirex Software”





Name of event : Webinar on “Demo Installation of Clinirex Software

Name of participants or semester/department: Pharm D

Date : 28th of November 2021

Time: 10:15AM-11:30AM.

Mode:online

Platform :google meet (<https://meet.google.com/wam-wbke-jzk>)



International Workshop on 'Leadership, Clinical Pharmacy and its Opportunities



IQAC OF

SHREE DHANVANTARY PHARMACY COLLEGE

ORGANIZING AN INTERNATIONAL WORKSHOP ON

" LEADERSHIP, CLINICAL PHARMACY

AND IT'S OPPORTUNITIES"

DATE: 13th -14th DECEMBER 2021



Speaker

Dr. Karthik Rakam

**CEO &
Co-Founder of Avenida**



Speaker

Dr. Ashwani Dhar

**Senior Vice President
of Leadership at
KardioGenics, California, USA &
Co-Founder of Avenida**

Learning Outcomes of the Workshop:

- To Analyze the case
- Identification of the drug therapy problem
- To understand the true meaning of Pharm.D.
- To understand and appreciate the role of clinical pharmacist in the Health care team.
- To develop the leadership skills.

Registration Details:

Link: <https://forms.gle/2sY4KSVx1brM6wBDA>

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E-mail: steffimfc@gmail.com

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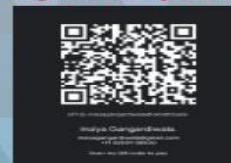
Convener

**Dr. Pallavi KJ
Head, Dept. of Pharmacy
Practice**

Co-Ordinators

**Ms. Sonam Gandhi
Ms. Hardi Patel**

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**College Address: KIM [East], Near Railway Station, Dhanvantary College
Road, Taluka : Olpad, Dist : Surat, Gujarat, India. E-mail: info@sdpc.co.in**



Name of event : International Workshop on 'Leadership, Clinical Pharmacy and its Opportunities

Name of participants or semester/department: Pharm D and B.Pharm Student, Students from over Gujarat colleges

Date : 13th & 14th of December 2021

Time: Two days



Skill Development Module



Name of event : Skill Development Module

Name of participants or semester/department: Pharm D and B.Pharm Student,

Date :23/12/2021

Navratri Celebration



**Event:** Navratri Celebration**Date:** 18/10/2021**Day:** Monday**Time:** 12:00 pm**Participants:** Pharm D. And B.Pharm Student, All Teaching and Non-Teaching Staff**Venue:** SDPC Campus, Kim

Description of Event: The event started around 12:00 p.m. with a prayer song by the artists. The event was well attended by the all the enthusiastic students, faculty and staff members in traditional grooming. All the participants cherished the performance of DJ with a vibrant dancing style of Garba . All the Students, Faculty and Staff Members of SHREE DHANVANTARY PHARMACY COLLEGE, KIM were invited to attend the event. The navrotsav event became an excellent example of celebration of tradition with joy and fervour at its fullest along with the discipline of students.



Fresher's Day Celebration



**YOU'RE INVITED TO THE
FRESHERS 2K21**

Dr. M. N. Noolvi
Professor and Principal
M. Pharm, Ph.D

Dr. Pallavi K. J.
PharmD Head
M.Pharm, Ph.D

Dr. Uttam A. More
Associate Professor
M. Pharm, Ph.D

**HAS GRACIOUSLY CONSENTED
TO BE THE CHIEF GUEST**

**On 27th October
At Shree Dhanvantary
Pharmacy College Ground**

THEME - BOLLYWOOD

**DRESS UP
&
SHOW UP**

**9 AM
ONWARDS**



Event: Fresher's Day Celebration

Date:27/10/2021

Day: Thursday

Time: 9:00 AM

Participants: Pharm D. And B.Pharm Student, All Teaching and Non-Teaching Staff

Venue: SDPC Campus, Kim

Description of Event: The purpose of Fresher's Party is to welcome new students in a friendly atmosphere and to encourage their creative impulses to boost their confidence. It is the day where seniors and juniors finally bond and unite to celebrate being part of the college. Students of Second year B.pharm students were welcomed with the token of love to this party. Started with lamp lightening and inaugural speech by Honorable Principal, Dr. M.N. NOOLVI to the freshers. The program was hosted by students of 3rd year of B.pharm and Pharm.D. Many events were organized for the fresher's students.

Book Published

The present study was an attempt to develop floating microspheres of Atorvastatin calcium using ethyl cellulose as polymer by non-aqueous solvent evaporation technique. FTIR results shows there were no drug-polymer interaction. The influence of drug – polymer ratio and RPM on the physical characteristics of microspheres (size, drug loading and kinetic of release) were investigated. In vitro release of Atorvastatin calcium from prepared microspheres was found to be satisfactory. Optimization was done. Among all the formulations, AT5 shows good drug release. From in-vitro drug release profile of all the formulations could be better expressed by Higuchi model as they showed good linearity with "R" value. The optimized AT5 formulation was subjected to SEM analysis and accelerated stability studies by storing at various ICH storage conditions for 60 days. The samples were analyzed for its drug content and physical appearance at an interval of 15 days. It shows better storage at $25^{\circ}\text{C} \pm 2^{\circ}\text{C}/60\%\text{RH}$. Thus, it can be concluded that AT5 formulation shows better results and hence, Atorvastatin calcium as anti hyperlipoproteinemia can be successfully delivered as microspheres.



Manish Goyani
Shreya Goyani



I, Dr. Manish Goyani working as a Professor in Department of Pharmaceutics in Shree Dhanvantary pharmacy college. I received total 11 lakhs Grants from Various Government agencies. I Published 33 papers in various National as well as International Journals. I attended 37 national as well as International Conferences, Seminars, FDP and CEP.



5 7 8 6 2 0 4 7 2 4 6 2 1

Manish Goyani, Shreya Goyani

Formulation, Optimization and Evaluation of GRDDS

Atorvastatin Calcium Floating Microspheres



Name of Faculty: Dr. Manish Goyani

department: Pharmaceutics

title of book : Formulation, Optimization and Evaluation of GRDDS



Paper Publication By Faculty

Sr No.	Authors name & title of publication	Journal	Month/ Year	Volume	Page no.	DOI	Publisher /ISSN/ISB N No.	Whether Peer Reviewed/ Impact Factor
1.	Tanvi H. Desai Shrikant V. Joshi	Evaluation of Anticancer activity of Acorus calamus using in silico and in vitro models	2021	11(11)	E5663	10.7439/ijpr.v11i11.5663	ISSN: 2277-3312	IF:0.108

Desai and Joshi / International Journal of Pharmacological Research 2021; 11(11): e5663.

e5663

International Journal of Pharmacological Research

ISSN: 2277-3312 (Online)

Journal DOI: <https://doi.org/10.7439/ijpr>

Original Research Article

Evaluation of Anticancer activity of *Acorus calamus* using *in silico* and *in vitro* models

Tanvi H. Desai^{*1} and Shrikant V. Joshi²¹Shree Dhanvantary Pharmacy College, Kim-Surat, Gujarat, India²Maliba Pharmacy College, Uka Tarsadia University, Bardoli - Surat, Gujarat, India

Abstract

The present study evaluated the anticancer action of saponin rich fraction of *Acorus calamus* by the use of *in silico* and *in-vitro* models. *In silico* studies of 1 α , 2 β , 3 γ , 19 α -tetrahydroxyurs-12-en-28-oic acid-28-O- β -D-glucopyranosyl (1 \rightarrow 2)- β -D-galactopyranoside and 3 β , 22 α , 24,29-tetrahydroxyolean-12-en-3-O- β -D-arabinosyl(1 \rightarrow 3)- β -D-arabinopyranoside was performed via PASS Online and Swiss Target Prediction software for the prediction of structure based pharmacological activities and docking studies with Autodock Vina. Saponin rich fraction was examined for its effects on growth of MCF-7 cells using MTT antiproliferative assay. Angiogenic property was assessed by *in vitro* shell less cultures of chick embryo using different (3 μ g/ml, 6 μ g/ml, and 12 μ g/ml) concentrations. Chromosomal aberration assay was studied *in vitro* in cultured human blood after the treatment of saponin rich fraction for the physical reliability of chromosomes. Apoptogenic prospective of saponin rich fraction was also assessed in MCF-7 cells by using cleaved caspases-3 and cleaved caspase-8. MTT assay result demonstrated IC50 value of saponin rich fraction at 6 μ g/mL in MCF-7 cells. Angiogenic parameters showed significant ($p < 0.05$) decline after the treatment. Insignificant chromosomal aberrations were observed in normal blood cells. Treatment of saponin rich fraction stimulates caspases-3 (OD 0.04 at 450 nm) and caspase-8 (OD 0.08 at 450 nm) in MCF-7 cells.

Keywords: *Acorus calamus*, Human breast cancer MCF -7 cells, MTT assay, Angiogenesis assay, Chromosomal aberration assay, Apoptosis assay.

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