DEPARTMENT OF PHARMACEUTICAL SCIENCES AND TECHNOLOGY

ABOUT THE DEPARTMENT

PROFESSOR DR. (MRS.) MARIAM S. DEGANI
B.Pharm, M.Pharm, PhD (Tech)
Head of Department and Professor in Pharmaceutical Chemistry

MISSION:

To achieve the best in pedagogy and research, through creation of a dedicated team of faculty and state of art research facility, to develop skilled manpower and innovative cost effective technology to support national healthcare programmes

VISION:

To be a globally recognized premier educational and research centre with world class facilities, adopting international best practices, focused on the integration of science and technology in the areas of Drug Discovery, Drug Delivery, Organic Process Research and Herbal Healthcare Products

A BRIEF OVERVIEW OF 2017-18:

The year 2017-18 began on a good note, with continued excellence in research as well as new initiatives in teaching, in the Department of Pharmaceutical Sciences and Technology (DPST). The department students opting for career with industry had good campus placement with national and multinational companies, while several B. Tech. & B. Pharm students opting for higher education got admission with good universities both international and national. It is heartening to note that some of the industries have been coming to ICT year after year to recruit our graduates and post graduates including Ph.D. students. The training imparted to our students by DPST faculty is thus well appreciated by industry and is a matter of great pride and satisfaction.

DPST celebrated its platinum jubilee celebration on Saturday, April 7, 2018 in K. V. Auditorium, ICT. Chief Guest was Padmavibhushan Prof. M. M. Sharma. Guest of Honor was Padmabhushan Dr. A. V. Rama Rao. Padmashree Prof. G D. Yadav presided over the function. An interactive workshop on "Dream Careers & Entrepreneurship" was arranged for students. Speakers were Harpreet Kaur, Aditya Pattani, Abhijit Jadahv, Urmila Joshi, Amol Hule, Abhijit Shitut, Aneesh Sheth, Nandkumar Bhirud and Mahalaxmi Chandra. Panel Discussion was chaired by Rajiv Panse. The Programme ended with lunch to all.

Our Bachelors, Masters as well as PhD programs continue to attract students of high calibre. One new initiative is the interdisciplinary Master's program in M. Tech. (Pharmaceutical Biotechnology) coursewhich has already been approved by DBT with a substantial funding, has commenced from July 2016.

DPST continues to be supported by various government grants, and research in collaboration with industries, both Indian and International. We thank our alumni and well-wishers for their continued support by way of donations.

MAJOR RESEARCH AREAS:

- **Pharmaceutics and Formulation:** Design of Drug delivery systems for oral, parenteral, transdermal, nasal, buccal and sublingual, ocular and vaginal drug delivery including Nano Drug Delivery systems.
- **Pharmaceutical Chemistry:** Drug design and discovery, Computer Aided Drug

Discovery, Design & Synthesis of drugs drug intermediates and NCE's, Process optimization and synthesis of intermediates used in APIs, Green Chemistry

- **Medicinal Natural Products including pharmacology and pharmacognosy:** Evaluation of indigenous plants for various pharmacological activities(In-Vitro/In-Vivo),Enzyme mediated assays, Drug metabolism and Pharmacokinetic studies including bio distribution, optimisation of protocols for Pharmacodynamic activities with appropriate biomarkers,Extraction and isolation of phytoconstituents, Standardization and stability of herbal drug products, Modification of herbal constituents for synthesis of useful compounds
- **Biotechnology:** Bioanalytical method development, Nanotechnology in drug delivery, Protein and nucleic acid delivery, pharmaceutical biotechnology.

MAJOR INSTRUMENTAL / PROCESSING FACILITIES:

- 400 MHz NMR, GC-MS, LC-MS, FT-IRs, HPTLC, several HPLCs, GC, UV, DSC, Fluorimeter, Polarimeter, Parallel Plate Synthesizer and other chemistry related instruments, CADD lab with sophisticated hardware and software for docking, homology modelling, 3D-QSAR and other modules, hydrogenator.
- Particle size analyzers, Zeta Sizer, Film coater, Extrusion spheroniser unit, Transdermal permeation apparatus, Freeze driers, High Pressure Homogenizers, Tablet machines, Dissolution apparatus, Sonicators, Fluidised bed coater cum processors, Dryers, Multipurpose processors for solid and liquid formulations, Facilities for wet and dry granulations, Facilities for bioadhesion testing, facilities for size reduction, Liquid filling machines, Facilities for processing of semi-solid dosage forms, ICH stability testing facilities,
- BIOPAC, Elisa readers, Aggregometer, Non-invasive blood pressure measuring instrument, microbiology facility and cell culture facility, incubator shaker, CO2 incubator, inverted microscope, fluorescence microscope, high speed cold centrifuges, freezers, and other basic equipments and instruments.

COURSES OFFERED

Name of the course	Intake
B. Pharm	30
B. Tech (Pharmaceutical Technology)	18
M. Pharm (Pharmaceutics, Pharmaceutical Chemistry, Medicinal Natural Products)	18
M. Tech (Pharmaceutical Technology)	8
M. Tech (Pharmaceutical Biotechnology)	10
Ph.D. (Tech) and Ph.D. (Sci.)	Variable

*We also support M. Tech (Bioprocess Technology), M. Tech (Perfumery) and M.Tech (Green Technology)

MAJOR GRANTS

TEQIP, DST-FIST, DBT, AICTE, DAE, UGC-CAS, CCRH, DST, ICMR, CSIR, AYUSH and various industry sponsored projects

FACULTY

PROFESSOR DR. (MRS.) MARIAM S. DEGANI
B.Pharm, M.Pharm, PhD (Tech)
Head of Department and Professor in Pharmaceutical Chemistry

RESEARCH INTERESTS:

Drug design including ligand, structure and fragment based drug design. Synthesis of focused libraries of potential bioactive molecules for infectious and Alzheimer's diseases, based on rational drug design, using modern techniques including parallel synthesis and microwave assisted synthesis. Exploration of natural products as therapeutic leads, Fluorine chemistry, process development of drug and drug intermediates, green chemistry using ionic liquids and newer catalytic system development.

RESEARCH STUDENTS:

Ph.D (Tech.)-10, M. Pharm-02, M. Tech- 02

RESEARCH PUBLICATIONS:

International - 04
National- Peer-regviewed-04
Conferenceproceedings-02

SPONSORED PROJECTS:

Government - 02
Private- 02

PROFESSIONAL ACTIVITIES:

1. Fellow of Maharashtra Academy of Sciences
2. Life member of Indian Pharmaceutical Association.
3. Life member of Indian Women Scientists Association (AWSA)
4. Member of Third World Organization of Women's Association in Science.
5. Life member of APTI.
6. Life member UDCT alumni association.
7. Member of American Chemical Society

FELLOWSHIPS/ MEMBERSHIPS OF PROFESSIONAL BODIES:

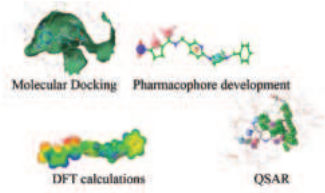
1. Fellow of Maharashtra Academy of Sciences
2. Life member of Indian Pharmaceutical Association.
3. Life member of Indian Women Scientists Association (AWSA)
4. Member of Third World Organization of Women's Association in Science.
5. Life member of APTI.
6. Life member UDCT alumni association.
7. Member of American Chemical Society

HIGHLIGHTS OF RESEARCH CARRIED OUT:

1. Drug Discovery Chemistry

a) **Rational drug design** including computer assisted design of potential anti-infective and other agents. (Techniques used include Homology modeling, molecular Docking, Pharmacophore mapping, 3D QSAR, Molecular dynamics, stereo electronic feature analysis.

b)



c) **Synthesis of small focused, compound libraries** using classical and novel reactions and catalysts, multi-component reactions for hit and lead generation and optimization and their in vitro evaluation including enzyme based

and whole cell based activity and toxicity.

d) Our library of **synthetic molecules (more than 500)** is being screened by collaborators both in India and abroad for various biological activities including anti-infective (Tuberculosis, MAC and other opportunistic infections, Filaria), some CNS (Alzheimer's disease) and cancer targets.

e) Exploration of **plant based products** for biological activity including anticancer, anti-infective and cytoprotective activities has recently been initiated in our laboratory.

2. Process chemistry research

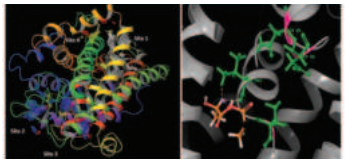
a) **Fluorine chemistry:** This includes design of Novel Fluorinating agents which are economic, safe, stable and easy to handle, development of Fluorination methods for Selective fluorination and catalysis and synthesis of 18F labeled ligands for PET scanning

b) **Use of Ionic Liquids (ILs) in synthesis and separation technologies:** This includes design of ILs using computational approach and synthesis of library of tailored ILs. The applications include extraction of natural products, as catalysts & solvents in synthesis and for CO2 capture in industrial processes.

c) **Development of innovative processes for pharmaceuticals** including drugs, intermediates and metabolites, using techniques such as Microwave assisted organic synthesis, continuous reactions (Flow chemistry), sonochemistry, parallel synthesis, newer catalysts and biocatalytic reactions.

1. Use of computational methods for formulation development

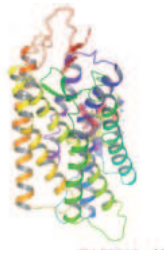
a) Studies on absorption of organoferrous compounds using in silico methods: The effect of organic acid component of ferrous complexes on the binding and iron absorption was studied usinghomology modelling, molecular docking and dynamics studies of a divalent metal ion transporter.



Binding sites on the human divalent metal transporter and binding of ferrous gluconate on receptor.

b) Taste masking of drugs:

The human taste receptor was modelled and the binding of various bitter drugs to the receptor was studied in detail.



Modelled human taste receptor TAS2R10 with its binding site

PUBLICATIONS (PEER REVIEWED) SO FAR: 67

PATENTS: 08

CONFERENCE PROCEEDINGS/PAPERS:77

SEMINARS/LECTURES/ ORATIONS DELIVERED: 25

PH.D.S AWARDED AS SINGLE/ CO-GUIDE: 17

MASTERS AWARDED AS SINGLE/ CO-GUIDE: 48

H-INDEX: 15

CITATIONS: 693

SUBJECTS TAUGHT

Pharmaceutical and Medicinal Chemistry IV and V, Advanced Medicinal Chemistry I and II, Drug discovery Process and Drug Design.

PROFESSOR K. G. AKAMANCHI
B.Sc., B. Sc. (Tech.), Ph.D. (Tech.)
Professor of Pharmaceutical Technology

RESEARCH INTEREST:

- Process Chemistry & Technology
- Synthetic Methodologies and novel transformations
- Hypervalent Iodine Reagent Chemistry
- Cell Surface Protein Isolation and Characterization
- Impurity: Synthesis, Characterization and Mechanism of Formation
- Design ,Synthesis and applications of novel dendritic lipids and novel heterolipids
- Protein isolation and stabilization by novel excipients

FELLOWSHIPS/ MEMBERSHIPS OF PROFESSIONAL BODIES:

- Recipient of National Open Merit Scholarships(1969 and 1973)
- Recipient of research fellowship from UGC (1978)
- Recipient of Indian National Science Academy Science Visiting Fellowship.
- Recipient of Dadasaheb Abyankar Visiting Fellowship
- Fellow of Maharashtra Academy of Science, Pune.
- Chairman, Ad-hoc Board of Studies in Pharmacy, University of Mumbai
- Academic Council Mumbai University
- Member, Board of studies Gulbarga University
- Member, Board of studies in Pharmacy SNDT University (for three years)
- Member Academic Council University of Mumbai
- Member Board of studies Karnataka Women's University Bijapur
- Member Board of studies in Pharmacy North Maharashtra University, Jalgaon
- Member, Board of Management ICT
- Member, Senate ICT
- Board of Studies in Pharmaceutical Sciences Gujarat Forensic Sciences University.
- Ex.Dean Research and Consultancy,ICT
- As AICTE expert member
- DSIR expert member
- NAB Accreditation Expert Committee
- Member IPA
- Member of Editorial Board of Indian Drugs
- Member of Editorial Board of Indian Journal of Pharmaceutical Sciences
- Member Indian Society for Mass Spectroscopy
- Member of Association of Carbohydrate Chemists and Technologist, India
- Member Indian Chemical Society
- Member Chemical Research Society of India
- Independent Director on the Board of Aarti Drugs Ltd. Mumbai

HIGHLIGHTS OF RESEARCH WORK DONE AND ITS IMPACT

Development of New Methodologies

Molecules are objects of chemistry provided by nature or created by human imagination. One of the prime activities of chemistry is to synthesise these molecules with an objective, be it for structure confirmation, sufficient materials for establishing the applications, or simply establish synthesis as an intellectual exercise. For making these molecules at different scales depending on the requirements, synthetic methodologies are needed and this need is ever-increasing with advent of complex molecules and specific industrial needs under the grab of utilisation of renewable resources,

sustainability, environmental and safety concerns.

Our research group, over the years, has focused on development of new synthetic methodologies and succeeded in development of many oxidative transformations using hypervalent iodine(V) reagents prominent among them being o-iodoxybenzoic acid (IBX), Dess-Martin periodinane (DMP) and iodic acid. The methods developed are impressive and are quite useful for medicinal chemistry, contract synthesis activity, and to some extent for large scale synthesis. Hypervalent iodine regents are very mild, work at neutral pH and in most cases at room temperatures except a few which require higher temperatures. Mechanistically basic feature of these reagents for oxidative transformation is a mandatory ligand exchange step before the ligand under goes oxidative transformation. This feature with relative nucleophilicity of ligands forms the basis for development of new methodologies. New methodologies have been developed using combination of hypervalent iodine reagents and nucelophiles either as activator for subsequent transformations or getting oxidized by themselves leading to the desired transformations. Our group has developed a combination of IBX/TBAB(tetrabutyl ammonium bromide) as a new reaction system where Br (-) as a nucleophile adds on to the central iodine facilitating ligand exchange leading to acceleration of many reactions. In other cases oxidation of Br (-) leading to generation of Br(+) triggers many transformations. Using this combination and activation, we have converted organic sulphides exclusively into sulfoxides without any further oxidation to sulphone. Sulfoxide containing molecules are an important class of drugs and therefore this methodology would find wide applications in medicinal chemistry. The bromine activation has been further exploited for one carbon oxidative dehomologation of amides to nitriles similar to Hoffmann rearrangement but under neutral conditions with no added base. This oxidative dehomologation reaction has been further developed into a new method for transformation of α,α-disubstituted amides into one carbon shorter ketones and disubstituted glycine amides into cyanamides. Similarly olefins have been converted directly into α-bromoketones and so on. This is one range of new methodologies that have been developed. Other nucleophiles used were substituted thioureas. The thioureas underwent oxidative desulfurisation forming carbodiimides. In another methodology the cardodiimides thus generated as intermediates from substituted thioureas have been trapped intramolecularly to form several azoles. This was possible because of mild reaction conditions and highly selective transformations due to preferential interaction of IBX with highly nucleophilic sulfur in presence of other nucleophilic sites such as oxygen and amines. One more interesting transformation, visualised while investigating mechanism of dehomologation reactions, was fast and quantitative conversion of aldehydes to nitriles in ammonia solution of IBX. Epoxides have been fragmented in aqueous ammonia solution of IBX where initial opening of epoxides to form amino-alcohols has been exploited for further oxidative cleavage without affecting other functionalities. This fragmentation process could prove to be a valuable alternative for direct oxidative cleavage of olefins where many a times stronger oxidising agents are needed. Earlier methodologies developed in our laboratory using hypervalent iodine reagents were oxidative deoximation to generate ketones or aldehydes. Recently, on similar lines we reacted aryl hydrazines with IBX expecting to generate aryl free radicals through oxidative expelling of nitrogen. Indeed aryl free radical were formed, as demonstrated by trapping experiments. Further aryl radicals were generated in presence of reactive naphthoquinones leading to C-arylation. This is a new way of generation of aryl free radicals under mild conditions. Apart from those described above many more simple methodologies including oxidative rearrangements, bromination, α-sulfoxylations of ketones have been developed.

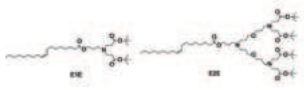
American Chemical Society Green Chemistry Institute Pharmaceutical Roundtable has found that amide formation avoiding poor atom economy reagents is the priority of research and as many as 65% drugs molecules prepared by leading pharmaceutical

companies contain an amide unit indicating its importance and prevalence in synthetic organic chemistry. Another key area of research is the activation of hydroxide group. Present methods that makes use of strong acidic reagents lead to formation of many by products or requires an additional step of activation through formation of good leaving group.

We initiated the work to solve these problems by developing a new acid catalyst with the hypothesis that a catalyst with oxophilic sites and acidity strong enough to activate hydroxyl group but not strong enough to deactivate amino group could do the trick and with an added feature of heterogeneous nature for easy separation to recycle. We made for the first time "sulfated tungstate" by reacting sodium tungstate with chlorosulfonic acid in an organic solvent. To our satisfaction sulfated tungstate turned out to have the features as we desired and proved to be a very good catalyst for amidation using carboxylic acid and amines. Our publications have triggered interest in development of many more catalysts for amidation. Having oxophilicity and mild acidity sulfated tungstate was found to activate hydroxy groups of alcohols for displacement without elimination to form olefinic by products. One such example is Ritter reaction a industrially useful 100% atom economy reaction between alcohol and nitrile to form amides. Since acid catalysed reactions are basic transformations in chemistry we are exploring sulfated tungstate for many more useful transformations. So far successful ones are transamidation, mono alkylation of amines, epoxide opening using amines. Another interesting observation was that sulfated tungstate was compatible with sulfur and found suitable for Kindler and Willgerodt reactions for making thioamides which required sulfur in just stoichiometric amounts, giving high yields. Otherwise these reactions are quite messy under conventional conditions due to polymerisation of sulfur and posing problems in product isolation. In addition several new methodologies have been introduced by our group.

New materials for Pharmaceutical Applications

Many recently introduced, approximately 40%, new chemical entities as drugs are water insoluble and have bioavailability problem when administered through oral route. Currently these issues are addressed through different approaches including development of NDDS (New Drug Delivery Systems), prodrug and use of cyclodextrins . Many of these NDDS employ oil phase and surfactants for solublisation. However the major problem is limited options among available of oil phases. We understood this limitations and the need and initiated research activity towards development of new materials (oil phases and surfactants). Our design concept was based on a lipid with long fatty acid chain preferably oleic acid because oleic acid is known to interact readily with cell membrane and therefore in addition to solubilisation may also facilitate absorption of drug molecule thus solving both solubility and bioavailability problems. The lipid structure envisaged has oleic acid as tail and branched head group linked through bio-labile ester functionality. The branched head group provides scope for manipulation of property through different functionalities and their number. More over by selecting tertiary amine as branching element additional features of basicity and hydrogen binding site are incorporated. With all these features the following structure has been considered and successfully synthesised.



All these new materials have shown excellent solubilisation properties which has been demonstrated by developing NDDS such SMEDDS(self micro emulsifying drug delivery systems), SLNs(solid lipid nanoparticles), SNEDDS (self nano emulsifying drug delivery systems), and other formulations. This material has been proven biocompatible and safe by using in vitro, ex-vivo and animal studies. This new lipid material, with basic nature, was found to be a good solubiliser and bioavailability enhancer, as demonstrated by animal studies for Curcummin a water insoluble natural product with varieties of promising activities. This work was presented recently (19th to 20th April 2014) at international

conference themed "Clinical Pharmacology - Translational Research: Patient to Public Health" held in Mumbai. The work was well appreciated and won the third prize. We are further modifying the structures to develop additives for stabilization of proteins in protein formulations, and by trying to introduce amino functionalities at the terminal end of the head groups to facilitate for siRNA and gene delivery. To conquer the problem of low solubility , low bioavailability and low dermal penetration our lab recently synthesized novel dendritic lipids with variable head and tail functionalities with potentially better properties than existed materials. Synthesized lipoidal biomaterial then used to formulate gel, SMEDDS,NLC and other lipid based formulations.

New excipients (As antiaggregation agent) for stabilization of proteins

Protein aggregation is a major problem of therapeutic proteins because aggregation decreases their therapeutic activity and shelf life and induces immunogenicity. Stabilization against aggregation is commonly attained by addition of different excipients like sugars, surfactants, buffers, salts, amino acids, polymers, etc. Generally these excipients are required in combination for stabilization. Sugars are required at a higher concentration, and commonly used surfactants like polysorbates have shortcomings due to oxidative degradation. With a view to have a multipurpose excipients to be effective at a lower concentration, we designed antiaggregation agents (AAAs) that would encompass the functionalities of two or more conventional excipients and would curtail the number of excipients to be added for stabilization. Our first designed AAA (In Figure), trehalose monooleate (TMO), is a sugar-fatty acid derivative. It has been evaluated in silico by docking on aggregation prone regions of model protein bovine serum albumin (BSA), and experimentally its effectiveness has been validated as stabilizer against agitation and thermal stress. Wide verities of experimental studies by us provided vital insights into conformational stability rendered by TMO. Overall, it can be said that TMO has good antiaggregation property. The present work is a preliminary attempt toward understanding protein excipients interactions and chemistry to provide rational basis for designing a single excipients for stabilization of protein formulations.

PUBLICATIONS (PEER REVIEWED) SO FAR: 110

PATENTS: 10

CONFERENCE PROCEEDINGS/PAPERS: 78

SEMINARS/LECTURES/ ORATIONS DELIVERED: 52

PH.D.S AWARDED AS SINGLE/ CO-GUIDE: 53

MASTERS AWARDED AS SINGLE/ CO-GUIDE: 84

H-INDEX: 23

CITATIONS: 1534

SUBJECTS TAUGHT:
Advance Organic Chemistry, Pharmaceutical Chemistry, Medicinal Chemistry, Pharmaceutical Technology

RESEARCH STUDENTS:
Ph.D (Tech.) - 04,
Ph. D.(Sci.) - 03
M. Pharm- 01 M. Tech- 01
Undergraduate Summer Fellows: 02

RESEARCH PUBLICATIONS:
International-09 (Peer-reviewed) : 9

CONFERENCE PROCEEDING : 2

SPONSORED PROJECTS:
Private- 01

PROFESSIONAL ACTIVITIES:

- R C member dept of chem.
- Co-ordinator TEQIP R & D committee
- Admission committee for PG Pharma Dept
- Fellowship enhancement committees
- Research Assistants selection committee.
- Membership of Editorial Boards with name of journal namely: Indian drugs And Indian Journal of Pharmaceutical Sciences

PROFESSOR (MRS.) PURNIMA D. AMIN
B.Pharm, M. Pharm, Ph.D. (Tech.)
Professor in Pharmacy

RESEARCH INTEREST:

- Developing Novel drug delivery systems using Hot Melt Extrusion (HME) and spray drying techniques.
- Developing Novel neutraceutical and Personal care dosage forms
- Solubility enhancement of poorly soluble drug using several excipients by solid dispersion techniques.
- Exploring newer applications for excipients
- Developing R & D models of pharmaceutical machinery.

FELLOWSHIPS OF NATIONAL AND INTERNATIONAL ACADEMIES OF SCIENCE OR ENGINEERING

- Fellow of Maharashtra Academy of science.
- Referee, Indian Journal of Pharmaceutical Science, and Drug Dev Industrial Pharmacy
- Referee, Journal of Nanotechnology
- Referee, Journal of Controlled Release
- Referee, Journal of Pharmaceutical Sciences

FELLOWSHIPS/ MEMBERSHIPS OF PROFESSIONAL BODIES

- Life Member, Indian Pharmaceutical Association, Maharashtra State Branch.
- Life Member, I.C.T. Alumni Association
- Member, Controlled Release Society, Indian Local Chapter
- Life member APTI

FELLOWSHIPS/ MEMBERSHIPS OF PROFESSIONAL BODIES

- Life Member, Indian Pharmaceutical Association, Maharashtra State Branch.
- Life Member, I.C.T. Alumni Association
- Member, Controlled Release Society, Indian Local Chapter
- Life member APTI

PUBLICATIONS (PEER REVIEWED) SO FAR: 99

PATENTS: 14

CONFERENCE PROCEEDINGS/PAPERS: 96

SEMINARS/LECTURES/ ORATIONS DELIVERED: 10

PH.D.S AWARDED AS SINGLE/ CO-GUIDE: 25

MASTERS AWARDED AS SINGLE/ CO-GUIDE: 75

H-INDEX: 13

CITATIONS: 593

HIGHLIGHTS OF RESEARCH WORK DONE AND ITS IMPACT:

Focus of the research work is on solubility enhancement of poorly soluble drugs, mainly drug belonging to BCS class II and IV.

Several technologies, viz, liquisolid compact technology, solid dispersion, using spray drying and hot melt technology, using porous carrier such as mesoporous silica and porous starch. All the technology used for solubility enhancement has given encouraging results and several pharma industries Evonik, Dow have supported these projects. Excipients are a must for developing pharma. These have classic role to play in drug delivery. Some of these Excipient are co processed to enhance their physical properties and their role in drug delivery is enhanced. Work is focused on new application for approved excipients.

Fixed dose combination of drugs are the need for the day, for treating TB, malaria, diabetics, and hypertension. Several immediate and controlled releases FDC are being developed using HME technology.

Improving stability of poorly stable nutraceuticals by microencapsulation and converting liquid into free flowing solid powder.

The above research work has resulted in several international publications and also patent filing. Research work has been appreciated, which has resulted in several pharma industries sponsoring research proposals.

SUBJECTS TAUGHT:

Lectures: Pharmaceutics, Pharmaceutical Technology, Dispensing Pharmacy, Hospital Pharmacy, Advanced Pharmaceutics
Practical: Biochemistry, Pharmaceutics-II, Dispensing Pharmacy

RESEARCH STUDENTS:

Ph.D (Tech.)-08, M. Tech. -02, M. Pharm Sci- 02
Undergraduate Summer Fellows- 04

RESEARCH PUBLICATIONS:

International- 05,
Peer- reviewed- 04,
Conference proceeding- 01

PATENTS: Indian-02

SPONSORED PROJECTS:

Private- 05

SPECIAL AWARDS/ HONOURS / ACCOLADES:

- Fellow of Maharashtra Academy of Science.

DR.GANESH U. CHATURBHUJ
B.Pharm, M.Pharm Sc., Ph.D (Tech), Post. Doc. (Northeastern University, Boston, MA, USA)
Associate Professor in Pharmaceutical Chemistry

RESEARCH INTERESTS

Organic synthesis, Catalysis and synthesis
Organic and Medicinal synthesis, Catalysis and synthesis, Analytical method development

FELLOWSHIPS/ MEMBERSHIPS OF PROFESSIONAL BODIES:

- APTI
- ICSB
- UAA ICT

HIGHLIGHTS OF RESEARCH WORK DONE AND ITS IMPACT:

Medicinal Chemistry: Our research group is involved in three major fields of medicinal chemistry for the development of new chemical entities for treating inflammation via inhibition of cyclooxygenase enzyme 2 (COX-2), treat multiple cognitive dysfunctions such as Alzheimer's disease or schizophrenia via positive allosteric activation of α7 nicotinic acetylcholine receptors (nAChRs), anti-fungal agents via inhibiting lanosterol 14a-demethylase (CYP51) in sterol biosynthesis,3treating neuropathic pain, neurodegenerative motor neuron disease like Amyotrophic lateral sclerosis and autoimmune neuromuscular disease like myasthenia gravis via targeting peripheral Cannabinoid receptor 2 (CBR2), treating cancer via activation of the TNF-α receptor to trigger the apoptosis, treating diabetes by controlling the absorption of glucose via Dipeptidyl peptidase 4 (DPP-4) enzyme in the gut wall as well as inhibiting the reabsorption of glucose by kidney via inhibition of Sodium-glucose Transporter enzyme (SGLT2) in S1 segment of proximal tubule of nephrons, treating the deadly multidrug-resistant microorganisms (bacteria and fungi) via development of NCE inspired by Bedaquiline. Herein we are using currently trending and updated computer-aided drug design software for high throughput screening in search of the novel scaffold; which includes site mapping, homology modeling, 2D/3D-QSAR study, pharmacophore development, and molecular docking. Best predictive candidates are chosen for the synthesis using advanced synthetic methodologies. Biological evaluation of a series of synthesized molecules performed using in-vitro and in-vivo models for their corresponding activities.

Catalysis: We took the development of a cost-effective, green and efficacious catalyst for synthesis of various heterocyclic molecules of biological importance. During this work, we introduced three new catalysts to the scientific literature viz. Sulfated polyborate, Aluminized polyborate, activated Fuller's earth, n-butyl Stannoic acid and many more to come. The catalyst developed were applied for various organic transformation resulting in expeditious and high yielding methodologies which are very much useful for the rapid synthesis of multiply substituted analogues in medicinal chemistry work in industry and academia.

Process chemistry of drugs and drug intermediates: Our research team is also involved in the development of novel synthetic routes of various active pharmaceutical ingredients and their intermediates using various industrially applicable and beneficial parameters; majorly safer/less hazardous chemicals, cost, and labor efficient, environment-friendly, green and reproducible, among other considerations. We are working for scale-up of pharmaceutically important reactions from milligram to kilogram scale with a kinetic study using pilot size vessels with the intention of maintaining similar characteristics to industry reactors.

Quality assurance of active pharmaceutical ingredients: Our research team is involved in the synthesis, purification, characterization of impurity standards, Metabolites and degradation products of API's. We are also involved in the analytical method development and method validation of various drugs / APIs.

PUBLICATIONS (PEER REVIEWED) SO FAR: 28

SEMINARS/LECTURES/ ORATIONS DELIVERED: 11

H- INDEX: 11

CITATIONS: 272

MASTERS AWARDED AS SINGLE GUIDE/ CO-GUIDE: 09

RESEARCH STUDENTS:
Ph.D (Tech.)- 02, Pharma- 08, M. Tech. (BPT) - 01

RESEARCH PUBLICATIONS:
International-28

PATENTS:
Indian-02

SPONSORED PROJECTS:
Government- 02

PROFESSIONAL ACTIVITIES:

- APTI
- ICSB
- UAA ICT

DR. HEMCHANDRA K. CHAUDHARI

M.Pharm Sci, PhD(Tech) in Pharmaceutical Chemistry
Assistant Professor in Pharmacy

RESEARCH INTERESTS:
Design using computer aided drug design approach, synthesis by conventional or novel methods and synthesized molecules evaluate against suitable activity.

PUBLICATIONS (PEER REVIEWED) SO FAR: 08

SUBJECTS TAUGHT:
Pharmaceutical and Medicinal chemistry-I,Pharmaceutical and Medicinal chemistry-I, Pharmaceutical and Medicinal chemistry-III, Medicinal Chemistry-I

RESEARCH PUBLICATIONS:
Ph.D. (Tech.) - 1 M.Tech. - 2
M.Pharm - 1

RESEARCH PUBLICATIONS:
International- 02

SPONSORED PROJECTS:
Government- 01

SPECIAL AWARDS/ HONOURS:
Best Teacher Award (SYBPharm)

PROFESSOR DR. (MRS.) PADMA V DEVARAJAN
B. Pharm, M.Pharm, PhD(Tech.), FMAS
Institute TEQIP Coordinator, Coordinator- M.Tech Pharmaceutical Biotechnology,
Professor in Pharmacy

RESEARCH INTERESTS:

- Engineering of nanoparticulate (polymer/ lipid/gold) drug delivery systems for targeted delivery in cancer and infectious diseases (tuberculosis) including scale up and commercialization, and screening for new targeting ligands
- Hepatic targeting, Brain targetting and Pulmonary targetting
- Non-invasive (nasal and sublingual) delivery systems for peptides, proteins and nucleic acids
- Vaccines
- Nano Diagnostics
- Veterinary Drug delivery Systems and Diagnostics
- Controlled Release and Bioenhanced Drug Delivery Systems (NDA and ANDA)

RESEARCH STUDENTS:

Ph.D. (Tech.) -13,
M. Pharm-2,
RA-1, M.
Tech. (Pharma)- 2,
M. Tech. (Pharma. Biotech.) -4
Undergraduate
Summer Fellows-03

RESEARCH PUBLICATIONS:

International- 03
Peer-reviewed-03
Conference proceeding- 13
Book chapters- 03

PATENTS:

Indian- 02

SPONSORED PROJECTS:

Government- 05
Private-03

PROFESSIONAL ACTIVITIES:

- DBT Nanobiotechnology Task Force Member
- Expert committee member for Women Scientist Scheme WOS A
- First Woman President, UDCT Alumni Association, 2017-2019
- Member, Research Recognition Committee, S.N.D.T. University
- Referee for International J. Pharmaceutics, Journal of Pharmaceutical Sciences, AAPS Pharma Sci Tech, Journal of Pharmaceutical and Biomedical Analysis, Indian Journal of Pharmaceutical Sciences, J. of Nanomedicine, J. Biomedical Nanotechnology
- Editorial Board Member, the Asian Journal of Pharmaceutical Sciences an Elsevier Publication. European Journal of Drug Metabolism and Pharmacokinetics, a Springer Publication. Indian Drugs(IDMA publication), Indian Journal of Pharmaceutical Sciences(IPA publication)
- Advisory Committee member, SVKM's Dr. BhanubenNanavati College of Pharmacy, Mumbai
- Member Board of Studies, ShobhabenPratapbhai Patel School of Pharmacy & Technology Management, SVKM's NarseeMonjee Institute of Management Studies (NMIMS).
- Chair of the Outstanding Paper Award Committee of the Drug Development and Translational Research 2015&2016, the Controlled Release Society Inc., USA.
- Chairperson Scientific Programme Committee - Society for Pharmaceutical Dissolution Science (SPDS) (2015-2018)
- Programme Chair for 'A Professional Development Certification Course Series arranged in five modules' entitled 'Pharmaceutical drug development process-Role of Dissolution Testing' by ICT and Society for Pharmaceutical Dissolution Science
- Inducted as Member of the Editorial Board of European Journal of Drug Metabolism and Pharmacokinetics, a Springer Publication.

SPECIAL AWARDS/ HONOURS:

RESEARCH AWARDS

- Awarded **IPA ACG INNOVATIVE SOLID DOSAGE FORM Award 2017** at 4th IPA ACG – SciTech Innovation Awards for "N'hance-SDF Bioenhanced Solid deispersion film based technology" by Indian Pharmaceutical Association at Chandigarh on 23rd Dec 2017.
- Awarded **BENGALURU NANO INDIA INNOVATION AWARD 2017** for BU'ANTRAP In situ solid lipid nanoparticles for veterinary infection at the 9th Bengaluru India Nano, organized by Karnataka Science & Technology Promotion Society (KSTePS), DST-Nano Mission in association with Jawaharlal Nehru Centre for Advanced Scientific Research Centre (JNCASR) Bangalore, on 8th December 2017, at The Lalit Ashok, Bangalore, India.

AWARDS FOR SUPERVISED RESEARCH

- **YOUTH INSPIRATOR AWARD 2018 in category of Science, Technology & Engineering** awarded to Amit S. Lokhande* (PhD Tech Student) for the research work under the supervision of Prof. Padma V. Devarajan, from Young Inspirators Network (YIN) in association with Sakal Media group, Delivering Change foundation, Saam TV, Nilaya Education trust Pune & Hashtag Menwear, at YIN Summer Youth Summit 2018, organized at KBP Modern College, Vashi, Navi Mumbai on 17th May 2018.
- **Sharad Naik Vidnyan Sanshodhan Puraskar 2017** to Ms. Shweta Sabu* (T. Y. B. Pharm) & Mr. Keith D'souza* (S. Y. Chem. Engg) amongst 70 projects all over Maharashtra, Goa, Gujarat & Karnataka States for Research Project titled as "Point of Care Simple Serum Phosphorous Detection Kit in Cattle" from Marathi VidnyanParishad (MaViPa), project mentored by Mr. Amit Lokhande* (PhD Tech Student) who awarded with **SPECIAL RESEARCH MENTOR AWARD 2017** and guided by Prof. Padma V. Devarajan on 29th April 2018
- **3rd Prize at FALLING WALLS LAB INDIA 2018** awarded to Amit S. Lokhande* (PhD Tech Student) for innovation titled as "Breaking the Wall of Phosphorous Diagnosis in Cattle". Awarded 3rd Prize amongst TOP 16 best innovations selected out of 260 applications all over India, Nepal, Bhutan, Bangladesh and Sri Lanka in Falling Walls Lab India 2018, organized by DAAD (German Academic Exchange Service) and DWIH (German House for Research & Innovation) New Delhi, in partnership with the Jadavpur University Kolkata. This Initiative was supported by the Federal Foreign Office, Germany on 7th April 2018
- Saugandha Das* (PhD Tech Student) was selected for the **Fifth batch of In-Residence Programme for Innovators at Rashtrapati Bhavan** for her Innovation STERI-FREEZE-Flash Freeze Sterilization. The said programme was launched by President of India during 19-23rd March 2018, organized in collaboration with National Innovation Foundation-India.
- **"Special Honour for Research Performance"** awarded to Amit S. Lokhande* (PhD Tech Student) for the PhD research work under the supervision of Prof. Padma V. Devarajan, from Dr. Babsaheb Ambedkar Research & Training Institute (BARTI) Pune, at the hands of honorable union central ministers, in an auspicious occasion of Abhinandansabha, Held at BharataratnaDr. Babasaheb Ambedkar National Smarak, Mahad, Raigad, Maharashtra, India on 20th March 2018.
- **1st Prize in Nano SparX competition-2017 amongst 10 best nano innovations selected all over India**, awarded toteam of Three namely, Saugandha Das (PhD Tech student), Darsheen Kotak (PhD Tech Student), Amit S. Lokhande

(PhD Tech student), for a Nano Innovation titled, "Insta Nano of Primaquine Phosphate for Malarial Relapse: A Pioneering Nano Drug Delivery System", in 9th Bengaluru India Nano event, organized by Karnataka Science & Technology Promotion Society (KSTePS), DST-Nano Mission in association with Jawaharlal Nehru Centre for Advanced Scientific Research Centre (JNCASR) Bangalore, on 8th December 2017, at The Lalit Ashok, Bangalore, India.

RESEARCH PRESENTATIONS

- **1st Best Poster Prize** for the poster titled "Comparative Evaluation of Anti-Tubercular Drug Combination Microparticles for Pulmonary Delivery in Biorelevant Dissolution Media", presented by **Amit S. Lokhande*, Padma V. Devarajan**, at DISSO-INDIA HYDERABAD 2018 International Annual Symposium organized by Society for Pharmaceutical Dissolution Science (SPDS) in association with SOTAX AG, on 28th & 29th June 2018, at Hotel Avasa, Madhapur, Hyderabad, India.
- **3rd Best poster Prize** for the poster titled, "Discriminating Dissolution Rates of Intranasal Curcumin Microemulsion and Curcumin Solution Using USP I and USP IV Apparatus", presented by **Rijo John*, Padma V. Devarajan**, at DISSO-INDIA HYDERABAD 2018 International Annual Symposium organized by Society for Pharmaceutical Dissolution Science (SPDS) in association with SOTAX AG, on 28th & 29th June 2018, at Hotel Avasa, Madhapur, Hyderabad, India.
- **Dr. R S Satoskar Award as 2nd Best Preclinical poster for the poster** titled "Silver Nanoparticles enabled Instantaneous Cost effective and Multiplexed Rare Blood Groups Identification System", presented by **Shweta Chawla*, Ajit Gorakshkar, Manisha mandkaikar, Kinjaksha Ghosh, Padma V. Devarajan**, at South Asian College an Affiliate of American College of Clinical Pharmacology (SAC-ACCP) 11th Annual International Conference on "Clinical Pharmacology for healthy ageing" on 1st & 2nd May 2018, held at Nehru Centre, Worli, Mumbai, India.
- **Dr. B. K. Bachawat Award as 3rd Best Preclinical Poster** for the poster titled "Sublingual Film of Salmon Calcitonin Loaded Hydroxyapatite Nanoparticles as Non Invasive Approach for the Treatment of Osteoporosis", presented by **Darsheen J Kotak*, Padma V. Devarajan**, at South Asian College an Affiliate of American College of Clinical Pharmacology (SAC-ACCP) 11th Annual International Conference on "Clinical Pharmacology for healthy ageing" on 1st & 2nd May 2018, held at Nehru Centre, Worli, Mumbai, India.
- **Certificate of Recognition** among top ten best posters for the poster titled "Demonstrating Insulin Dissociation for Enhanced Sublingual Permeation from Microemulsion", presented by **Amit S. Lokhande*, Arundhati Lele, Mariam S. Degani, Padma V. Devarajan**, at World Congress on Pharmaceutical Sciences (WCPS) 2017, organized by Conference Era, media partner HTO CLUB, on 5th to 7th October 2017, at Palmarinha Resort & Suites, Goa, India.

FELLOWSHIPS/ MEMBERSHIPS OF PROFESSIONAL BODIES:

- Nominated Fellow Maharashtra Academy of Sciences
- Chair- Scientific Programs-Society for Pharmaceutical Dissolution Science(SPDS)
- Vice President and Life member, Board of Governors UDCT Alumni Association(UAA)
- Ex-Treasurer, Ex-Secretary and Patron Member Controlled Release Society-

Indian Chapter

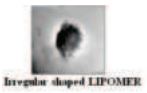
- Life Member Indian Pharmaceutical Association
- Life Member Indian Women Scientists Association.
- Member Indian Society of Surface Scientists and Technologists.
- Member Third World Organization of Women in Science
- Registered Pharmacist, Maharastra Pharmacy Council

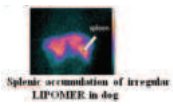
HIGHLIGHTS OF RESEARCH WORK DONE AND ITS IMPACT:

Innovations in Nanomedicine are in nationally relevant areas of healthcare, namely infectious diseases (Tuberculosis, AIDS, veterinary infections), cancer and diabetes with a focus on the design of practical and relevant interventions, to enable translation of nanomedicine from bench to clinic. Innovative oral DDS is yet another major area of research. Important contributions are highlighted below:

LIPOMER - Nanoparticle Shape and Drug Targeting

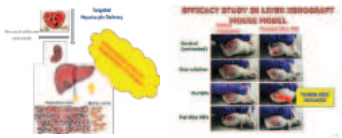
LIPOMER an innovative nanocarrier for veterinary infections, is the first ever application of nanomedicine in veterinary infections. We have for the first time reported the role of nanoparticles of irregular geometry in targeting drug loaded nanoparticles to the spleen (Journal of Biomedical Nanotechnology, 2008, 4(3, 359-369); J Pharm Sci.; 99(6):2576-81, 2010). This paper was cited in the US based magazine The Scientist April 2010 pg 69, under cutting edge research in Nanoparticles in drug development. Clinical success in E.Canis infection in dogs is demonstrated. More importantly, the scalability of this Lipomer has been successfully demonstrated (Am. J. PharmTech Res. 2013; 3(4)).





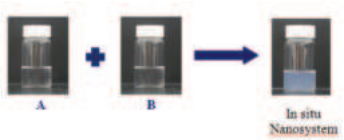
HepaTarg Dox for Hepatic Targeting

We have successfully developed Dox nanoparticlesanchored with the carbohydrate ligands (Hepa Targ), for improved therapy of hepatic cancer. High hepatocyte accumulation was confirmed in the rat model. Good efficacy with decreased toxicity was observed in the PLC/PRF/5 Liver Tumor mouse model.Suggesting great promise of HepaTarg Dox in the therapy of hepatic cancer. (Drug Delivery, 2016, DOI:10.3109/10717544.2015.1135488, Drug Delivery, 24:1, 20-29, DOI: 10.1080/10717544.2016.1225856)



Self Nanoprecipitating Preconcentrates (SNP)

A simple idea which completely overcomes the technology gap in the development of nano drug delivery systems. SNP involves generation of a mixed nanosystem, comprising lipid/polymeric nanoparticles and micelles, **IN SITU** by the patient or doctor by simply mixing two liquids (A &B) prior to administration. It has been successfully developed for anticancer drugs (doxorubicin, tamoxifen) and Anti HIV(Nevirapine), the technology appears too simple to be true! (Int J Pharm 2012, 429(1-2):104-12, 3053/MUM/2010)



Sublingual Nano Delivery System of insulin

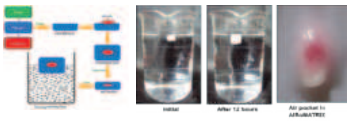
We have a granted Indian Patent based on microemulsion compositions for sublingual administration of insulin. This non injectable insulin delivery system exhibits great potential. This system can be readily scaled up for commercialization. (Granted Indian Patent 233413, Drug Delivery2015, 23 (2), pp429-436, Drug Delivery & Translational Research 2014, Vol-4, pp 429-438)

Gastroretentive Floating Drug Delivery Systems

Air^{0}Matrix Technology

Air^{0}Matrix technology is an innovative approach wherein matrix tablets are compressed with a central air cavity by a compression coating process. When dropped in an aqueous medium expansion of tablet

due tothe entrapped air enabled floatation. This Air^{0}Matrix tablets remained floating for >12h and presents an innovative gastro retentive DDS.



Floating multiparticulates by Holt Melt Extrusion (HME)

HME a densification technology was successfully exploited for design of low density floating multiparticulates of metoprolol succinate. Floating was achieved by an intelligent combination of polymers and effervescent agent. A controlled release formulation with floating lag time of <3 min and total floating time of >12h with controlled release upto 12h was optimized. (International Journal of Pharmaceutics, 2015, 491(1-2): 345-351)[Received the **Eudragit Award 2015**, awarded by Evonik India Pvt. Ltd., on 21st September 2016]

Curcumin SMEC Solid Dispersion for Arthritis

Bioenhanced increased surface area **Curcumin SMEC** solid dispersions as films, were developed by a simple technology as depicted below. High drug loading and high stability were important hallmarks.Approximately 400% bioenhancement and good anti-arthritic efficacy compared to indomethacinin the Complete Freund's Adjuvant (CFA) arthritis model in rats prove the great potential of this new DDS for therapy of rheumatoid arthritis (Pharm Res. 2016 Aug;33(8):1972-87)

PUBLICATIONS (PEER REVIEWED) SO FAR: 77

PATENTS (FILED/ GRANTED): 23/7

CONFERENCE PROCEEDINGS/PAPERS: 253

SEMINARS/LECTURES/ ORATIONS DELIVERED: 56

PHD AWARED AS SINGALE/ CO-GUIDE: 41

MASTERS AWARED AS SINGALE/ CO-GUIDE: 69

H-INDEX: 21

CITATIONS: 1425

SUBJECTS TAUGHT:

Targeted Drug Delivery, Drug Delivery Systems I, Drug Delivery Systems I, Targeted Drug Delivery, Pharmaceutics IV, Technology of solid dosage forms, Technology of sterile dosage forms

PROFESSOR (MRS.) ARCHANA R. JUVEKAR

B.Pharm, M.Pharm, PhD (Tech)

Professor in Pharmacology and Physiology

RESEARCH INTERESTS:

- Drug discovery and development from natural products and traditional medicines. Presently active in the areas of inflammation (TNF-α, IL-1β), life style diseases (obesity, hyperlipidemia and diabetes), anxiety, depression, alzheimer.
- Screening of plant extracts and their isolates (using bioassay-directed fractionation) for inflammation, diabetics, alzheimer, cancer, anxiety and depression activity which may be helpful as the leads for development of safer drugs with minimum side effects
- Standardization of herbal drugs and formulations.
- Bioassay-guided isolation and structure elucidation of biologically active compounds from medicinal plants in therapeutic areas

of cancer, alzheimer and diabetics.

- Evaluation of Pharmacological Interventions Targeting Pathophysiological Cascades (Oxidative stress, ER stress, Inflammation, apoptosis) involved in depression, anxiety, Diabetes, Diabetic Complications (neuropathy, encephalopathy & cardiomyopathy), Cognitive impairment (associated with Parkinson's and Alzheimer disease).
- Elucidation of Pharmacological Potential of NCEs in Disease Models for Efficacy Studies
- Safety Pharmacological Studies of NCEs.

FELLOWSHIPS/ MEMBERSHIPS OF PROFESSIONAL BODIES:

- Member of Board of Studies in Pharmacy under the faculty of pharmaceutical Sciences, Bharati Vidyapeeth Deemed University, Pune (India).
- Life member of Indian Pharmaceutical Association
- Life member of Indian Pharmacological Society
- Member of Gesellschaft für Arzneipflanzenforschung (GA) Society for Medicinal Plant Research, Germany
- Member of society for neuroscience
- Member of Ethnopharmacology society

HIGHLIGHTS OF RESEARCH WORK DONE AND ITS IMPACT:

The current areas of research in the lab has been on neuropharmacology (stress, depression, Alzheimer's disease), inflammation, wound healing and metabolic disorders such as obesity, type 2 diabetes mellitus, nonalcoholic fatty liver disease and diabetic nephropathy. The research work has resulted in several publications and presentations at national and international conferences such as Society for Neurosciences, USA, Alzheimer's Association International Conference (2017 and 2018), European Congress on Obesity, Austria and World Congress on Prevention of Diabetes and and Complications, 2018, Edinburgh.

PUBLICATIONS (PEER REVIEWED) SO FAR: 104

CONFERENCE PROCEEDINGS/PAPERS: 26

SEMINARS/LECTURES/ ORATIONS DELIVERED: 29

PH.D.S AWARDED AS SINGLE/ CO-GUIDE: 20

MASTERS AWARDED AS SINGLE/ CO-GUIDE: 61

H-INDEX: 07

CITATIONS:325

SUBJECT TAUGHT:

B.Pharm: Pharmacology-I, Pharmacology-II and Clinical Pharmacy

M.Pharm: Pharmacology, Toxicology and Therapeutics; Topics in Pharmacology; Models in Drug Delivery Systems

Practicals: Physiopharmacology (B.Tech Pharma); Pharmacology Lab-1; Pharmacology Lab-2 (B.Pharm)

REGULATORY TOXICITY

Evaluation of acute, repeated dose toxicity testing as per different regulatory guidelines.

Evaluation of genotoxicity (CA, MN, COMET) for different NCEs as per regulatory requirement.

Execution of principles of Good Laboratory Practices (GLPs) for regulatory compliance.

RESEARCH STUDENTS:

Ph.D (Tech.)-04,
M. Pharm- 02

RESEARCH PUBLICATIONS:

International – 56,
National- 48,
Conference proceeding- 26,
Books-1

PROFESSIONAL ACTIVITIES:

- Member of the Editorial Board of Indian Practitioner
- Member of Radiopharmaceuticals committee (RPC) under Board of Radiation and Isotope Technology
- Member of Research and Recognition Committee in the faculty of admission of Ph. D. of North Maharashtra University, Jalgaon

SPECIAL AWARDS/ HONOURS:

- U.I.C.T Golden Jubilee Research Fund Endowment of Rs.70,000/- for the research proposal entitled "Neuroprotective effect of polyphenols against β-amyloid induced toxicity in PC-12 cells" in 2015.
- Awarded Financial Assistance of amount Rs. 80,000/- from ICT Golden Jubilee Travel Grant scheme for attending 3rd World Parkinson Congress (WPC 2013), October 1- 4, 2013 in the Palais des congres Montreal, Québec, Canada.
- Received best Research Paper sponsored by the Al-Ameen College of Pharmacy Award for Best Paper published in IJPER 2011 in the subject of Pharmacognosy, entitled as "Antidiabetic and Antihyperlipidemic Effect of Alstonia Scholaris Linn Bark in Streptozotocin Induced Diabetic Rats" at APTI-17th annual National Convention, Manipal, India. 12th-14th October 2012.
- Awarded Financial Assistance of amount Rs. 43,673/- from AICTE, Govt. of India, New Delhi under Travel Grant scheme for attending 7th Joint Meeting of AFERP, ASP, GA, PSE & SIF Athens, Greece ". August 3-8, 2008 by AICTE, New Delhi.
- Best Appreciated paper Award for paper entitled as "Anti-Leukemic and anti-HIV activity of alkaloidal extract of Phyllanthus niruri" at the 34th Annual Conference on Indian Pharmacological Society; 21st – 23rd Jan. 2002, Abstract -24.
- U.D.C.T Golden Jubilee Research Fund Endowment of Rs. 25,000/- in 2005.
- U.D.C.T Golden Jubilee Research Fund Endowment of Rs. 35,000/- in 2001.
- U.D.C.T Golden Jubilee Research Fund Endowment of Rs.25, 000/- in 1996.

DR. PRAJAKTA DANDEKAR JAIN
Ph. D. (Tech.) in Bioprocess Technology
UGC Assistant Professor in Engineering Sciences

RESEARCH INTERESTS:

Nanocarriers for delivery of therapeutic nucleic acids and proteins, 2D and 3D cell cultures for preclinical investigations, tissue engineering, processing biopolymers for biomedical applications

RESEARCH STUDENTS:

Ph.D. (Tech.) – 08
Ph.D.(Sc) – 03
M.Tech. - 05

RESEARCH PUBLICATIONS:

International- 20
National: 01
Conference proceeding-25

PATENTS:

International- 01, Indian-03

SPONSORED PROJECTS:

Government- 06 Private-01

PROFESSIONAL ACTIVITIES:

- Member, Editorial Board, Asian Journal of Pharmaceutical Sciences (AJPS, ISSN 1818-0876)
- Invited Member, Executive Committee, Controlled Release Society-Indian Chapter
- Member, Standing Evaluation Committee for the review of proposals, European Respiratory Society, Switzerland
- Member, European Respiratory Society, Switzerland
- Member, 'Chapter Engagement Task Force', Controlled Release Society, USA
- Mentor, Mentor-Protégé

Program, Member, Controlled Release Society, USA
- Member, Outreach Committee, American College of Clinical Pharmacology, USA
- Member, Controlled Release Society- USA and Indian Chapter
- Member, Indian Pharmaceutical Association (IPA)

SPECIAL AWARDS/ HONOURS:

- M.V. Deshpande Young Scientist Award at the 11th Asia Pacific Chitin and Chitosan Symposium, 2016
- Galenus-Privatstiftung Award, Austria, 2016 to attend the 43rd Annual Meeting and Exposition of the Controlled Release Society, Seattle, USA, July 2016.

FELLOWSHIPS/ MEMBERSHIPS OF PROFESSIONAL BODIES:

- Young Associate of Maharashtra Academy of Sciences
- Fellow of European Respiratory Society
- Member, Standing Evaluation Committee for the review of proposals, European Respiratory Society, Switzerland
- Member, European Respiratory Society, Switzerland
- Member, Volunteer Recruitment Committee, Controlled Release Society, USA
- Mentor, Mentor-Protégé Program, Member, Controlled Release Society, USA
- Executive Committee Member, Controlled Release Society- Indian Chapter
- Member, Controlled Release Society- USA and Indian Chapter
- Member, Outreach Committee, American College of Clinical Pharmacology, USA
- Member, UDCT Alumni Association

HIGHLIGHTS OF RESEARCH WORK DONE AND ITS IMPACT:

The larger goal of my research has been development of safe and efficacious nanomedicines for alleviating cancer and infectious diseases. To achieve this goal I have integrated various principles of Pharmaceutical Sciences, Bioprocess Technology and Molecular biology as I progressed through a decade of my advanced studies. My early research was focused on development of polymeric nanoparticles of herbal anti-cancer agents like curcumin and ellagic acid using commercially available and established polymers. When encapsulated within the nanoparticle systems, these agents exhibited better efficacy and bioavailability in animal models of inflammatory disorders like ulcerative colitis and infectious diseases like malaria. During my postdoctoral tenure, I explored potential of newer polymers like hydrophobic derivative of starch for delivering synthetic anticancer agent, docetaxel. Again, the drug-loaded nanoparticles exhibited better efficacy than the un-encapsulated drug by the virtue of their enhanced cellular uptake and retention within the cells. During the same time, I also explored the potential of cationic cyclodextrin based polymer-polyrotaxane for intracellular delivery of nucleic acid (siRNA) against a protein important for intra-macrophage survival of mycobacteria responsible for tuberculosis (TB). This application bears significance especially due to the extensive number of TB-afflicted patients worldwide and the fact that India bears the highest TB burden in the world. This work has recently featured on the coverpage of Journals of Materials Chemistry B as it was well received by the reviewers and the editorial office. However although many of the commercial polymers are effective for drug delivery, they exhibit long-term toxicological implications. Further most of the common processes employed for nanoparticle synthesis involve the use of organic solvents, which reduce the commercial feasibility of the processes and result in solvent-associated toxicity. Thus as an independent researcher at ICT, my research group focuses on use of biopolymers and green processes for generating nanocarriers for therapeutic and diagnostic applications.

We focus on development of nanocarriers of derivatives of chitosanfor delivering siRNA to alleviate TB. Apart from its suitable characteristics like water-solubility, biodegradability and non-toxic and non-allergenic nature, all of which are desirable for developing a safe and effective

nanomedicine, we hypothesize this cationic polymer to chelate the metal ions in the inner mycobacterial envelope leading to increased cell fluidity and bacterial death. This hypothesis was tested in virulent strain of mycobacteria (H37Rv), wherein the polymer was found to completely inhibit the infectious agent. This was confirmed to be due to the chelating action of polymer for the metal ions present in the inner envelope of mycobacterial cell wall. COS nanoparticles were prepared by ionotropic gelation method using a crosslinking agent. This is a 'green' technique based on electrostatic interaction between the cationic polymer and anionic crosslinker. When mycobacterial inhibition assay was conducted using the nanoparticles, they were found to inhibit the bacteria at a much lower concentration of than polymer, which may be due to better cellular interaction of nanocarriers owing to their small size.

Cellular assays proved safety of the nanoparticles and their potential for enhanced uptake bymacropinocytosis.

The biological efficacy of the nanoparticles was confirmed by evaluating their ability to deliver siRNA against model gene, where the nanoparticles were found to almost completely silence this protein. Further cellular studies to silence protein relevant for intra-macrophage survival of mycobacteria are currently in progress. Success in these studies may provide an effective and specific therapy for one of the deadliest diseases affecting humans.

An additional area of focus of our research group is green synthesis of chitosan derivatives that has been explored in development of nanomedicines. We are focusing on green catalysts for synthesizing low molecular weight polymers which are water soluble. With success in preliminary studies, further investigations are in progress to optimize reaction parameters using a combination of both the catalysts and microwave energy. A comparison will be made between both the catalysts with regards to the efficiency and economy of the process. The ultimate goal is to establish a set of parameters enabling synthesis of range of COS, with varying molecular weights, for application in nanomedicines and other biomedical applications. Apart from spherical nanocarriers, our group has also initiated fabrication of therapeutic nanofibers of biopolymers, using the commercially feasible electrospinning method, for wound healing applications. We are fabricating nanofibers based on combination of biopolymers and anti-bacterial inorganic nanocarriers for healing applications. Our group also focuses on the employment of these inorganic nanocarriers for development of non-enzymatic biosensors to measure glucose levels in various biological fluids like saliva, urine, blood etc with high sensitivity.

Thus overall, my research efforts are directed towards development of safe, effective nanocarriers, which may be translated to the society to alleviate grave disease conditions affecting the Indian and global population.

PUBLICATIONS (PEER REVIEWED) SO FAR: 39

PATENTS: 08

CONFERENCE PROCEEDINGS/PAPERS: 89

SEMINARS/LECTURES/ ORATIONS DELIVERED: 08

MASTERS AWARDED AS SINGLE/ CO-GUIDE:11

H-INDEX: 13

CITATIONS: 567

SUBJECT TAUGHT:

- PHT 1601 Pharmaceutical Biotechnology VII (Final Year B. Pharm.)
- PHT 1061 Pharmaceutical Biotechnology-BT V T.Y.B. Tech. (Pharma)
- BSP 1202 Molecular Biology and Biotechnology Laboratory V (T.Y.B.Pharm.)
- PHP1016 Nanotechnology and Medicinal Chemistry Laboratory VIII (Final Year B. Tech. (Pharma)
- PHT 1107 Hospital Pharmacy and Drug Store Management (Shared with Prof. Amin)VI (T.Y.B. Pharm)
- PBT 2101 Pharmaceutical Biotechnology-II (M.Tech. Pharmaceutical Biotechnology)
- PHP 1061 Biotechnology LaboratoryV (T.Y.B. Tech. (Pharma)

PROFESSOR SHREERANG V. JOSHI

B. Sc., B.Sc.(Tech.), Ph.D., D.I.M.

Professor of Pharmaceutical Chemistry

RESERACH INTEREST:

- Process Development of Phospholipids
- Process Development of Artificial Sweeteners
- Synthesis of Natural Products of Biological Importance
- New methodologies in Organic Synthesis
- Process Development of API Intermediates
- Synthesis of Drug- Polymer Conjugates

SUBJECTS TAUGHT:

Pharmaceutical Chemistry, Chemistry of natural products & Spectroscopy
Retro-synthesis & Catalytic Process , co ordination chemistry Advanced Biochemistry

RESERACH STUDENTS:

M. (Pharm) - 2

RESERACH PUBLICATIONS

INTERNATIONAL: 04

PATENTS: 31

PROFESSOR K. S. LADDHA

D. Pharm., B.Pharm, Sci., M.Pharm. Sci., PhD (Tech)

Professor of Pharmacognosy

RESEARCH INTERESTS:

- Technology for extraction and isolation of phytoconstituents:
- Process development for Aloe vera gel, drink, juice, cosmetics, etc.
- Standardization and stability of herbal drug products.
- Technological development for the extraction of herbal drugs.
- Utilization of herbal constituents as an intermediate for synthesis of useful compounds.
- Effect of plant growth regulator on medicinal plants.
- Enhancement of gum output from trees.
- Thaumatin formulation.

PROFILE AND ACCOMPLISHMENTS:

The laboratory is involved in various aspects associated with herbal sector. So far following technologies developed in the laboratory was successfully commercialized.

1. Develelopment of Alove vera juice
2. Development of aloe vera gel
3. Extraction and isolation of forskolin
4. Development of chlorophyll liquid

5. Development of natural pesticide.
6. Extraction and isolation of ursolic acid and ellagic acid.

The laboratory is also involved in the preparation of monograph of Indian Medicinal Plants which are being published by ICMR (Indian Council of Medical research), Govt. of India, India.

FELLOWSHIPS/ MEMBERSHIPS OF PROFESSIONAL BODIES:

1. Life Member, Indian Pharmaceutical Association
2. Life Member, Indian Society of Pharmacognosy.

HIGHLIGHTS OF RESEARCH WORK DONE AND ITS IMPART:

Medicinal natural Products Research Laboratory is dedicated to the research and development in the area of herbal drug technology. The projects which have been worked have helped the industry constructively. The major focus of the laboratory is to develop technology for the extraction and isolation of phytoconstituents. Accordingly some of the projects like extraction and isolation of Andrographolide, Ecdysone, Ellagic acid, Embelin, Forskolin, Ursolic acid, are taken up commercially. To augment the development of herbal drug industry/ Ayurvedic drug industry lab is consistently working towards the development of analytical profile for raw material, polyherbal formulations and with stability data for herbal drug formulations. Other major contribution is in the field of Aloe vera juice industry. The lab is instrumental in setting up aloe Vera processing unit for four independent manufacturers with technological know-how for the products. Recently lab is also recognized by ICMR (Indian Council for Medical Research, Govt. of India, Delhi) to create monographs for the herbal raw materials. The laboratory has been able to attract good number of projects both form private as well as govt. organizations.

PUBLICATIONS (PEER REVIEWED) SO FAR: 96

PATENTS: 01

CONFERENCE PROCEEDINGS/PAPERS: 39

SEMINARS/LECTURES/ ORATIONS DELIVERED: 15

PH.D.S AWARDED AS SINGLE/ CO-GUIDE: 15

MASTERS AWARDED AS SINGLE/ CO-GUIDE: 58

H-INDEX: 4

SUBJECTS TAUGHT:

Lecture: Pharmacognosy, Advanced Pharmacognosy and Medicinal Natural Product

Practical: Pharmacognosy

RESEARCH STUDENTS:

RA -01 M.Tech. -04, M.Pharm - 03

RESEARCH PUBLICATIONS:

International- 31 National- 65 Peer-reviewed-96
Conference proceeding- 03
Books Chapters) – 17

PATENTS: Indian – 01

SPONSORED PROJECTS:

Government- 04
Private- 03

PROFESSIONAL ACTIVITIES:

- Life Member, Indian Pharmaceutical Association
- Life Member, Indian Society of Pharmacognosy

SPECIAL AWARDS/ HONOURS:

- 'Golden Jubilee Research Fund Endowment' of Rs. 15000/- has been awarded from University of Mumbai institute of Chemical Technology, Matunga, Mumbai –19, for the research project entitled "Standardization of Plant Drugs", 1993.
- 'Senior Research Fellowship' from University Grants Commission, Ministry Of Education, New Delhi, Nov. 1989.

- 'Golden Jubilee Research Fund Endowment' of Rs. 25000/- has been awarded from University of Mumbai institute of Chemical Technology, Matunga, Mumbai –19, for the research project entitled "Evaluation of Herbal Drugs", 1993.
- 'Alumnus of the Year', Award in recognition of the achievements attained, from Principal K. M. Kundnani College of Pharmacy, Mumbai – 18, 2003.
- 'Indian Drug Best Paper Award 2008' for research paper entitled "A HPTLC densitometric determination of antioxidant constituents from chyawanprash" Indian Drugs, 45 (7), July 2008, pp. 536-541.

PROFESSOR (MRS.) VANDANA B. PATRAVALE
B.Pharm, M.Pharm, PhD (Tech)
Professor of Pharmaceutics

RESEARCH INTERESTS:

- Nanotechnology based drug and gene delivery systems (lipid, polymeric, micellarnanocarriers, nanosuspensions, micro/ nanoemulsions and self-micro/nano emulsifying systems)
- Vaccines and adjuvants
- Nanodiagnostics
- Tissue engineering and scaffolds
- Medical devices viz. coronary stents, intrauterine devices etc.
- Novel carriers for solubilization and formulation development thereof
- Cosmeceuticals
- New polymer and lipid conjugates, surfactant synthesis
- Exploring potential of indigenous excipients
- Modified release dosage forms for all routes of administration

RESEARCH STUDENTS:

P.D.F.- 1,
Ph.D (Tech.)-17,
Ph.D.(Sci.)- 01, M. Pharm-02,
M. Tech- 02

RESEARCH PUBLICATIONS:

International- Research articles: 04 Review articles: 01
Peer-reviewed- Research articles: 04 Review articles: 01
Conference proceeding- 25,
Books and Book chapter- 05

SPONSORED PROJECTS:

Government- 01
Private- 03

PROFESSIONAL ACTIVITIES:

- Expert member, DSIR
- Fellow, Maharashtra Academy of sciences, India
- Advisor and Life Member, American Association of Pharmaceutical Scientists, USA
- Vice President, Controlled Release Society, Indian Chapter
- Covener, Association of Pharmaceutical Teachers of India- Women Forum
- Life Member, Association of Pharmaceutical Teachers of India
- Life Member, Indian Cosmetics Technologist Association
- Member, Indian society for Surface Science and

Technology

- Life Member, Indian Pharmaceutical Association, Maharashtra State Branch
- Life Member, Indian Women Scientists Association
- Life Member, U.D.C.T. Alumni Association

SPECIAL AWARDS/ HONOURS:

1. ShriAmrutMody Distinguished Researcher Award by Indian Pharmaceutical Association Maharashtra State Branch's AmrutMody Research Fund Committee (2018)
2. UGC-BSR Mid Career Award Grant 2018 by University Grants Commission
3. Gandhiaan Young Technological Innovation (GYTI) award 2018 under category MLM (More from less for Many) by BIRAC-SRISHTI (2018)
4. Gandhiaan Young Technological Innovation (GYTI) award 2018 under category Socially Relevant Innovation by BIRAC-SRISHTI (2018)

AWARDS RECEIVED BY STUDENTS

- Best oral presentation award at SELECTBIO 2018 on 'Novel Formulation Strategies 2018' in session 'Academic Innovation Oral Presentations: Novel and Nanostructured Drug Delivery Systems' for presentation on topic 'Peptide Metallodendrimers: A novel realm in wound healing therapeutics' at Mumbai, India 2018 (Pandya A.)
- Gandhian Young Technological Innovation (GYTI) Award 2018 for project entitled, "NanoSpermviricide: A Dual Acting Aid for Prevention of Unintended Pregnancy and Unprotected Sexual Intercourse Associated HIV" from Honorable President of India at RashtrapatiBhavan, New Delhi, India, 2018 (Mirani A., Upadhaya P)
- Gandhian Young Technological Innovation (GYTI) Award 2018 for project entitled, "Point of Care Nano Diagnostic Kit for Brucellosis" from Honorable President of India at RashtrapatiBhavan, New Delhi, India, 2018 (Pawar R., Vyas S)
- Prestigious scholarship 'Prime Minister's Fellowship for Doctoral Research, 2017 (Kakade P.)
- Best Review Article Award 2017for article entitled, "Lymphatic delivery: Concept, Challenges and Applications" at Indian Drug Manufacturers Association Annual Day, Mumbai, India, 2018 (Bora C., Prabhu R)
- Innovation Award worth 4000 USD sponsored by InnoCentive Inc. USA, an open innovation and crowdsourcing company, for the problem "Using gels to improve the Esthetics of Laundry Detergents", 2017 (Mirani A., Ghodake V., Shah P., Patravale V)
- Young researcher award for presenting poster entitled "Nanoparticle engineering of Aprepitant using Nano-By-Design (NbD) Approach" at International Summit on Nanotechnology, Pharma and Nursing, Dubai, UAE, 2017 (Kakade P.)
- Young researcher award for presenting poster entitled "NanoMicide gel for Prevention of Sexually Transmitted HIV-1 Infection" at International Summit on Nanotechnology, Pharma and Nursing, Dubai, UAE, 2017 (Pandya A.)
- Best poster presentation award at International Summit on Nanotechnology, Pharma and Nursing for poster entitled "Nanolipidic drug delivery for sickle cell anemia" at Dubai, UAE, 2017 (Pawar R.)
- Best poster presentation award at International Summit on Nanotechnology, Pharma and Nursing for poster entitled "Comparison of 'Top-down' methods for nanocrystal engineering: A case study" at Dubai, UAE, 2017 (Chogale M.)
- Best poster presentation award at Nanobioteck 2017 for poster entitled "Exploring nattokinase for the effective treatment of Alzheimer's disease" at Kerala, India, 2017 (Naik S.)
- Best oral presentation award at International

Conference & Expo on Agriculture & Veterinary Sciences:Research and Technology for presentation entitled "Non-invasive nanodiagnsotic approach for the detection of brucellosis" at Hydearabad, India, 2017 (Naik S.)

FELLOWSHIPS/ MEMBERSHIPS OF PROFESSIONAL BODIES:

- Member, Academic Planning and Development Committee (APDC) NIPER, India
- Fellow, Maharashtra Academy of Sciences, India
- Vice President, Controlled Release Society, Indian Chapter
- Convener, Association of Pharmaceutical Teachers of India- Women Forum
- Life Member, American Association of Pharmaceutical Scientists, USA
- Life Member, Association of Pharmaceutical Teachers of India
- Life Member, Indian Cosmetic Technologists Association
- Member, Indian society for Surface Science and Technology
- Life Member, IPA, Maharashtra State Branch
- Life Member, Indian Women Scientists Association
- Life Member, U.D.C.T. Alumni Association
- Patron Member, Controlled Release Society, Indian Chapter

HIGHLIGHTS OF RESEARCH WORK DONE AND ITS IMPACT

Her research in area of malaria therapy is very extensive and has seen significant success in terms of one granted patent, high impact international research publications and scalable technologies ready for transfer. Nanodelivery approaches have been successfully explored by her for targeted drug delivery to infected RBCs in malaria patients along with potential dose reduction (safety enhancement) of antimalarial drugs. Salient features of malaria therapy research are listed below

Targeted drug delivery to malaria infected RBCs

The key finding of the research indicated that Blank Lipid Nanocarriers developed for antimalarial studies showed selective uptake by malaria infected RBCs as compared to non-infected RBCs and were observed to co-localize with the parasite mitochondria. Thus, prove the development of infected RBC targeted therapy.

Her noteworthy research in this area also includes development of promising malaria therapy for pregnant women and for cerebral malaria.

VACCINE ADJUVANTS

- Blank lipid nanocarriers developed for antimalarial studies boosted antibody levels for the antigens tested thushave potential as vaccine adjuvants.
- Nanocarries were fabricated using a green technology and utilized successfully for nasal immunization for Brucellosis. The challenge test for the developed vaccine is ongoing in USA (Bill and Melinda Gates Sponsored project)

DIAGNOSTICS

- A nanocarrier based non-invasive and point-of-care diagnostic kit is ready for Brucellosis and the platform is being studied for Parasitic diseases.

TARGETED DRUG DELIVERY APPROACHES

- Nanostructured lipid carriers of anticancer drugs and gene delivery modules for lymphatic system targeted breast cancer therapeutics via nuclear co-localization.
- Micellarnanocarriers are successfully developed for targeted brain delivery via intranasal and transdermal route.

EFFICACY ENHANCED FORMULATION APPROACHES

- Bioenhancement Poorly bioavailable actives from natural as well as synthetic origin using plethora of technologies viz. Hot melt extrusion, high pressure homogenization, supercritical fluid extraction, nanoformulation approaches [Commercial success: Products developed with CadilaPharmaceuticsl Ltd: Cadisome (Amphotericin B liposomes), Zillion (Taste masked ondansetron tablets), O-lit (Mouth dissolving tablets), Immuvac (Immunomodulator),

Ranx (Ranolazine tablets), ACELOX (Ranitidine Oral Suspension and Syrup), Paclitaxel/tacrolimus soft gelatin capsules, Curcumin soft gelatin capsules, Zolpidem, Nebivilol injection]

- Modified release dosage forms for all routes of administration

TISSUE ENGINEERING AND SCAFFOLDS

- Engineering of polysaccharide based tissue scaffolds using cost effectives techniques for wound healing
- Exploring scaffold of water soluble derivative of chitosan, chitosan complexes for wound healing

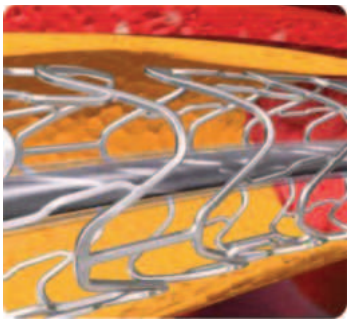
NEW POLYMER AND LIPID CONJUGATES, SURFACTANT SYNTHESIS

- Cationic lipids for gene delivery
- Lipid conjugates and novel surfactant synthesis for targeted drug delivery across blood brain barrier

EXPLORING POTENTIAL OF INDIGENOUS EXCIPIENTS

- Various polymers of natural origin are being explored for their pharmaceutical and cosmeceutical application viz. tamarind seed polysaccharides, mango kernel fat etc.
- Extraction of actives from natural sources viz. Hippophaerhamnoides (seed and berry oil), Coleus forskohlii, Anogeissuslatifolia, Punicagranatum, Myristicafragrans, Brassica Junceaand applications thereof

Drug eluting coronary stents



A platform technology based on biodegradable polymers for coronary stents was successfully developed and transferred to Sahajanand Medical Technologies Pvt. Ltd. Based on this, for the first time coronary stent using biodegradable polymer was introduced in market and received CE mark. Currently, such 35 coronary stents are being marketed in India and abroad under the trade namesInfinniumTM, SupralimusTM, SupralimuscoreTM, S-link and SupraflexTM(More than 3 lakh stents have been implanted). Drug coated balloons and other stents are under development.

Intrauterine contraceptive device

Designed to release 20µg of API per day over a period of 5 years (equivalent to Mirena®). This was a generic product development and technology successfully transferred to Famy Care Ltd. for WHO market.

PUBLICATIONS (PEER REVIEWED) SO FAR:

Research articles –
International: 72,
National:11
Review articles-
International: 34 National:3

PATENTS:

Granted- 10, Applied- 26

CONFERENCE PROCEEDINGS/PAPERS:

323

SEMINARS/LECTURES/ ORATIONS DELIVERED:

118

PH.D.S AWARDED AS SINGLE/ CO-GUIDE: 21

MASTERS AWARDED AS SINGLE/ CO-GUIDE: 61

H-INDEX: 38

CITATIONS: 5242

SUBJECT TAUGHT:

Pharmaceutics, Cosmeticology, Validation and regulatory affairs, Nanoscience and technology, Pharmaceutics laboratory – I, Pharmaceutics laboratory – II,Pharmaceutical Formulation Technology Lab I, Cosmeticology laboratory, Technology of liquids and topical laboratory, Solid dosage form laboratory,Drug delivery system I,Drug delivery system II, Advance pharmaceutics,Targeted drug delivery systems

PROFESSOR SADHANA SATHAYE
B.Pharm, M.Pharm, PhD (Tech)
Professor of Pharmacy

RESEARCH INTERESTS:

- Research on Metabolic disorders and related complications on cellular and molecular level.
- Study of neurodegenerative and neurological disorders for effective therapy of Parkinson's disease, Alzheimer's disease and Epilepsy.
- Standardization of protocols for in-vitro and in-vivo pharmacological evaluation of herbal substances for immunomodulatory, hepatoprotective, aphrodisiac, appetite stimulant, anti-diabetic, anti-convulsant and anti-osteoporotic activity.
- Biotechnological isolation, production and purification of enzymes and phytoactives of pharmacological and nutraceutical importance, using fermentation technology.
- Pharmacological evaluation of various herbal substances including safety, efficacy and pharmacokinetics profiling of new drug delivery systems and new chemical entities, Ayurvedic and homeopathic formulations.
- Evaluation of biocompatible materials as per international norms and requirements.
- Study of heavy metal toxicity in Ayurvedic formulations and alternative medicines using modern research methodology.
- Toxicity evaluation as per international norms and requirements. Evaluation of acute, sub-acute and chronic toxicity according to OECD guidelines. Evaluation of Dermal toxicity and hypersensitivity reactions according to OECD guidelines.
- Studies on herb-drug interactions.
- Pharmacokinetic studies.
- Screening anti-tubercular activities of isolated phytoconstituents.

RESEARCH STUDENTS:

Ph.D. (Tech.) – 05

M.Tech/ M. Pharm- 11

RESEARCH PUBLICATIONS:

International- 10

Peer-reviewed -10

PATENTS:

Indian- 02 (applied)

SPONSORED PROJECTS:

Private-01

PROFESSIONAL ACTIVITIES:

- Chairperson, Institutional Animal Ethics Committee, ICT.
- Nominee of CPCSEA
- Expert pharmacologist at The Advertising Standards Council of India.
- Consultant, Pharmaceutical Industry in India for API selection and evaluation of drug delivery systems.
- Life Member of University Department of Chemical Technology (U.D.C.T) Alumni Association .
- Life Member of Indian Pharmaceutical Association (I.P.A), Maharashtra.
- Life Member of Association of Pharmaceutical Teachers of India (A.P.T.I).
- Life Member of Indian Pharmacological Society (I.P.S).
- Life Member of Indian Women Scientists' Association.

- Life member of Society of Toxicology.
- Member of Society of Neuroscience, Washington DC, USA.
- Member independent ethics committee for conduct of clinical studies

SPECIAL AWARDS/ HONOURS:

- Ganesh Bhat won second prize in "**BEST ABLE 2017**" Bangalore.
- Sneha Bagle and Safala Malvankar won second prize in Vortex 2017- Industry defined problem.
- Shubham Mulange won third prize in oral presentation at 9th National IPA students Congress 2017.

FELLOWSHIPS/ MEMBERSHIPS OF PROFESSIONAL BODIES:

- Fellow Maharashtra Academy of Sciences
- Registered pharmacist with Maharashtra State Pharmacy Council
- Chairperson, Institutional Animal Ethics Committee, ICT
- Nominee of CPCSEA
- Expert pharmacologist at The Advertising Standards Council of India
- Consultant, Pharmaceutical Industry in India for API selection and evaluation of drug delivery systems
- Life Member of University Department of Chemical Technology (U.D.C.T) Alumni Association
- Life Member of Indian Pharmaceutical Association (I.P.A), Maharashtra.
- Life Member of Association of Pharmaceutical Teachers of India (A.P.T.I)
- Life Member of Indian Pharmacological Society (I.P.S)
- Life Member of Indian Women Scientists' Association
- Life member of Society of Toxicology
- Member independent ethics committee for conduct of clinical studies
- Member of editorial board of International Research Journal of Pharmaceutical Sciences
- Member of editorial board of International Journal of Biological and Chemical Sciences (IJBCS)

HIGHLIGHTS OF RESEARCH WORK DONE AND ITS IMPACT:

Research is focused on role of inflammation in pathogenesis of neurological/neurodegenerative disorders like epilepsy, Parkinson's disease and Alzheimer's disease.

Advanced glycation end (AGEs) products and related inflammation in Diabetes mellitus leading to diabetic complications is important focus as well.

Herbal extracts, isolated phytoconstituents are studied extensively as a promising therapy of disorders as discussed above.

The objective is to prevent the disorders and/or relieve the symptoms to provide good quality life to the patients.

PUBLICATIONS (PEER REVIEWED) SO FAR: 71

PATENTS: 1 (APPLED)

CONFERENCE PROCEEDINGS/PAPERS: 03

SEMINARS/LECTURES/ ORATIONS DELIVERED: 05

PH.D.S AWARDED AS SINGLE/ CO-GUIDE: 02

MASTERS AWARDED AS SINGLE/ CO-GUIDE: 03

H-INDEX: 14

CITATIONS: 877

SUBJECTS TAUGHT:

Anatomy, Physiology, Pathophysiology, (Theory/ Practicals) Pharmacology (Theory/Practicals), Models for Drug Delivery system (Theory), Pharmacology (Theory/Practicals), Toxicology & Therapeutics (Theory), Physiopharmacology (Theory).

DR. V. N. TELVEKAR
B. Sc, B. Sc (Tech.); M. Sc (Tech); Ph D. (Tech.)
Associate Professor in Pharmaceutical Chemistry

RESEARCH INTEREST:

- Invention of New Reaction and Reaction System.
- Design of Novel Bioactive Molecules Using Computed Aided Drug Design.
- Total synthesis Bioactive Natural Products.
- Process Development.

HIGHLIGHTS OF RESEARCH WORK DONE AND ITS IMPACT:

Invention of New Reactions and Reaction System:
The principles of green chemistry also motivate me to create new synthetic methods. Here I have been focusing on the employment of novel application of exiting reagents as well as novel reagent system developed for chemical transformations.

Design and Synthesis of Novel Bioactive Molecules using Computer Aided Drug Design:
I am exploring my knowledge in the area of medicinal chemistry. Currently I am working on novel bioactive molecules which are designed by technique like pharmacophore and structure based drug design using various software. These designed molecules are synthesized and evaluated.

Total Synthesis of Bioactive Natural Products:
The unifying thesis behind all of our methodological and mechanistic studies is that the chemistry to emerge from such studies should be applicable to real synthetic problems. I view target synthesis as the best proof of this concept.

Process Development:
In our globally-linked economy, process development capabilities are the basis for successful competition. Successful process development requires fundamentally improved approaches to reducing waste, innovation, scale-up, technology transfer and optimization of manufacturing processes. My interest is to accomplishment of these objectives.

PUBLICATIONS (PEER REVIEWED) SO FAR: 59

PATENTS: 09

CONFERENCE PROCEEDINGS/PAPERS: 30

SEMINARS/LECTURES/ ORATIONS DELIVERED: 02

PH.D.S AWARDED AS SINGLE/ CO-GUIDE: 10

MASTERS AWARDED AS SINGLE/ CO-GUIDE: 40

H-INDEX: 12

CITATIONS : 549

SUBJECTS TAUGHT :
Advanced Pharmaceutical Chemistry (M. Pharm & M. Tech.)

RESEARCH STUDENTS:
Ph.D. (Tech.)- 09
Ph.D.(Sc)- 01
M.Tech. - 02
M.Pharma- 02

RESEARCH PUBLICATIONS:
International- 03

PROFESSOR P. R. VAVIA

B. Pharm., M.Pharm., Ph.D. (Tech), FIPA, FMASc

Dean (AP), Professor of Pharmaceutics a. Educational qualifications

RESEARCH INTERESTS:

- Cyclodextrins based drug delivery systems
- Nanosponge based drug delivery system
- Transdermal drug delivery systems
- Nanosuspension, Bioencapsulation, Multiparticulate drug delivery system
- Lipid based colloidal formulations
- Modified release films
- Polymer synthesis for drug delivery
- Melt Extrusion Technology
- Oral liquid dosage forms
- Techniques in solubilization
- Liposome based Drug Delivery Systems
- Protein and peptide drug delivery systems

RESEARCH STUDENTS:

Ph.D. (Tech.) – 15, M. Tech. -01, M.Pharm. – 02

RESEARCH PUBLICATIONS:

International- 127
National- 21

Peer-reviewed- 148
Conference proceeding- 250

PATENTS:

International – 3 (Published)

Indian – 7 (Granted) and > 30 (Complete specification)

SPONSORED PROJECTS:

Government- 1 Private- 2 ongoing

PROFESSIONAL ACTIVITIES:

Memberships & Honorary positions

- Life member, Indian Pharmaceutical Association
- President, Indian Pharmaceutical Association (2002-2004) (Maharashtra State Branch)
- Member, Association of Pharmacy Teachers of India (APTI)
- Member, Royal Pharmaceutical Society of Great Britain (Hon. Membership)
- Inspector appointed by Pharmacy Council of India for Inspection of Institutions
- Inspector appointed by AICTE for Inspection of Institution
- Member, Editorial board of Indian Journal of Pharmaceutical sciences.
- Editorial Board of Pharma Times
- Expert Member, DSIR for inspection of industrial R & D facility
- Nominee of Vice-chancellor for appointment of teachers of Mumbai University
- Academic Dean, Institute of Chemical Technology, (2012 to till date)
- Member, International Advisory board, Asian Oceanic Cyclodextrin League
- Scientific Convener, Indian Pharmaceutical Congress Association, 2006-2009.
- Member of Italian Cyclodextrin League.
- Convener, 5th Young Innovative Choice Competition (YICC) and Young Research Competition (YRC), 2010-2011
- IDMA Technical Sub-Committee
- Governing Body Bombay college of pharmacy
- Western Region Subcommittee of AICTE

Reviewer of

- AAPS Pharm Sci-Tech
- International Journal of Pharmaceutics
- Nanomedicine: Nanotechnology, Biology, and Medicine
- Indian Journal Pharmaceutical Sciences
- Pharmaceutical research
- Journal of pharmacy and Pharmacology
- AIChE Journal

- Journal of Controlled Release
- Nanoscale
- Drug Delivery and Translational Research

SPECIAL AWARDS/ HONOURS:

- Research Fellow of Human Resources Development
- Junior Research Fellow of Department of Atomic Energy
- Senior Research Fellow of Department of Atomic Energy
- Fellow, Indian Pharmaceutical Association, 2003 awarded at Indian Pharmaceutical Congress, Chennai, Dec. 21st -23rd, 2003
- Johnson and Johnson, USA, Research Award (US$ 20,000), 2001.
- U.P. Government National Award for an outstanding work done in the area of interaction with Industries, 2005.
- Maharashtra Fellow for Medical Sciences, 2006.
- Best Teacher's Award, University Institute of Chemical Technology at undergraduate level, 2007.
- Distinguish Teacher Award, Maharashtra Pharmacy Association, 2009.
- "Incentives to Meritorious Teachers", Dr. K. H. Gharda Reward, Board of Governers, Institute of Chemical Technology, 2009.
- Best Teacher's Award, University Institute of Chemical Technology at undergraduate level, 2010.
- Best Teacher's Award, Institute of Chemical Technology at undergraduate level, 2012.
- Best Teacher's Award, Institute of Chemical Technology at undergraduate level, 2014.
- Prof. P. R. Vavia awarded VASVIK Award in the category of Biological Sciences & Technology, for developing the Novel Drug Delivery Systems, Synthesis and application of novel polymers and excipients and targeted drug delivery in cancer treatment, January 2015.
- Best Teacher's Award, Institute of Chemical Technology at undergraduate level, 2016.
- Best Teacher's Award, Institute of Chemical Technology at undergraduate level, 2018.
- Awarded with Global RESOMER Award 2017 (third position) for developing the "Novel bilayer dissolving microneedle arrays with concentrated PLGA nanomicroparticle to targeted intradermal delivery: Proof of concept".

FELLOWSHIPS/ MEMBERSHIPS OF PROFESSIONAL BODIES:

Memberships & Honorary positions:

- Life member, Indian Pharmaceutical Association
- President, Indian Pharmaceutical Association (2002-2004) (Maharashtra State Branch)
- Member, Association of Pharmacy Teachers of India (APTI)
- Member, Royal Pharmaceutical Society of Great Britain (Hon. Membership)
- Inspector appointed by Pharmacy Council of India for Inspection of Institutions
- Inspector appointed by AICTE for Inspection of Institution
- Member, Editorial board of Indian Journal of Pharmaceutical sciences.
- Editorial Board of Pharma Times
- Expert Member, DSIR for inspection of industrial R & D facility
- Nominee of Vice-chancellor for appointment of teachers of Mumbai University
- Academic Dean, Institute of Chemical Technology, (2012 to till date)
- Member, International Advisory board, Asian Oceanic Cyclodextrin League
- Scientific Convener, Indian Pharmaceutical Congress Association, 2006-2009.
- Member of Italian Cyclodextrin League.
- Convener, 5th Young Innovative Choice Competition (YICC)

and Young Research Competition (YRC), 2010-2011

- IDMA Technical Sub-Committee
- Governing Body Bombay college of pharmacy
- Western Region Subcommittee of AICTE

Reviewer of

- AAPS Pharm Sci-Tech
- International Journal of Pharmaceutics
- Nanomedicine: Nanotechnology, Biology, and Medicine
- Indian Journal Pharmaceutical Sciences
- Pharmaceutical research
- Journal of pharmacy and Pharmacology
- AIChE Journal
- Journal of Controlled Release

HIGHLIGHTS OF RESEARCH WORK DONE AND ITS IMPACT :

Going with the pace of growing pharmaceutical sector, Prof. P.R. Vavia and his research group is involved in fundamental as well as industrial research allied to interdisciplinary areas of pharmaceutical science. The principal objective of research is always set to surmount constraints for efficient delivery of potential drug candidates and fabrication of value added non-infringing drug formulations. Research work based on cyclodextrin and their derivatives, nanosponge based drug delivery systems, transdermal drug delivery systems, synthesis and development of nanocarriers and polymer conjugates for active tumor targeting, techniques in solubilization of poorly water soluble drugs, hot melt extrusion, nanoemulsion, microemulsion, nanosuspensions, Bioencapsulation of poorly soluble actives, modified release multiparticulate drug delivery systems, application of particle engineering strategies, protein and peptide based drug delivery systems, synthesis and application of novel polymers and excipients is going on with expected outcomes of industrial applicability and scalability.

To the date more than 25 technologies are successfully commercialized. To name a few, Fentanyl Transdermal Patch (FENSTUD), Rusan Pvt Ltd, Self microemulsifying drug delivery system of Cyclosporin (PROMUNER) by by Mega Lifesciences, Cyclodextrin based formulations of poorly water soluble drugs like Nimesulide and Rofecoxib (ROFF-BCD-50) by Unichem Pvt Ltd, Novel tablet formulation of Itraconazole (ESZOLE) by Kusum Healthcare Ltd, Extended release matrix, bilayer, film coated tablet of Furosemide (ROSEMIDE) by Kusum Healthcare Ltd, Combination drug product of Metformine Acarbose Tablet (GLUCOBAY M 25 & GLUCOBAY M 50) by Bayer Pvt Ltd, etc.

Manpower Development in formulation technology, validation of analytical methods, In-vivo studies of developed formulations and preparation of Common Technical Document (CTD) as per regulatory requirements of international markets has given equal importance to meet the international standards.

PUBLICATIONS (PEER REVIEWED) SO FAR:

148

PATENTS:

10 (3 PCT and 7 Indian)

CONFERENCE PROCEEDINGS/PAPERS:

42

SEMINARS/LECTURES/ ORATIONS DELIVERED:

252

PH.D.S AWARDED AS SINGLE/ CO-GUIDE

: 43 (Single)

MASTERS AWARDED AS SINGLE/ CO-GUIDE:

55 (Single)

H-INDEX:

26

CITATIONS:

>1556

SUBJECT TAUGHT:

B.Pharm, B.Tech (Pharma), M.Pharm.Sci., M.Tech. (Pharma), (Pharmaceutics, Drug Delivery System I & II, Advanced Pharmaceutics, Biopharmaceutics)

DPST SUPPORT STAFF

Dr. Ravindra V. Sawant
(Technical Assistant)

Sunil N. Jadhav
(Laboratory Assistant)

Hemanta Kumar G. Sahoo
(Laboratory Assistant)

Anita V. Bankar
(Laboratory Assistant)

Mithila M. Sardar
(Laboratory Assistant)

Mahendra T. Kudekar
(Animal House Assistant)

Rekha S. Khatal
(Laboratory Attendant)

Santosh D. Chile
(Laboratory Attendant)

Kiran T. Chaudhari
(Laboratory Attendant)

Krishna B. Dhengle
(Laboratory Attendant)

UNDER GRADUATE STUDENT SEMINAR/ PROJECT

Final Year B. Tech. Project 2017-18

Prof. P. D. Amin		
14PHT1014	HimaniGarud	Design of plant to manufacture 10 TPD of experimentally proven Ibu- Nicot. Cocrystal Tablets using HME
14PHT1017	Pratik Dalvi	-
Dr. P. D. Jain		
14PHT1013	AyushAditya Pal	Intensified synthesis of Furan derivative from marine waste using green catalyst
14PHT1003	KushalDhake	Intensified synthesis of Furan derivative from marine waste using green catalyst
Prof. S. V. Joshi		
14PHT1005	Abhishek Naik	Synthesis of Benzhydrylamine and its Derivatives as useful Pharmaceutical Applications.
14PHT1010	Pooja Kotwal	Synthesis of Benzhydrylamine and its Derivatives as useful Pharmaceutical Applications.
Prof. S. Sathaye		
14PHT1006	SaquibShaikh	In vitro inhibition of Advanced glycation end product (AGE) formation by phytoconstituents
14PHT1020	NidhiRaghuram	In vitro inhibition of Advanced glycation end product (AGE) formation by phytoconstituents
Prof. P. R. Vavia		
14PHT1009	ShashankBhangde	Design of Rivastigmine TD fllis evaluation
14PHT1012	Manan Shah	Design of Rivastigmine TD fllis evaluation

Final Year B. Tech. Seminar 2017-18

Prof. Mariam S. Degani		
14PHT1001	JuhiSalgaonkar	Flow reactors and Microreaction Technology
Prof. K. G. Akamanchi		
14PHT1005	AbhishekNaik	Recovery of API from formulation systems and wastewater during manufacture
14PHT1017	Pratik Dalvi	Downstream process design for monoclonal antibody purification.
Prof. P. D. Amin		
14PHT1006	SaquibShaikh	Alpha Lipoic Acid
Dr. G. U. Chaturbhuj		
14PHT1008	SandeepSadgir	Synthesis of Prostaglandin Analogues
Dr. H. K. Chaudhari		
14PHT1003	KushalDhake	Lipase and Its Catalytic Promiscuity
Prof .P. V. Devarajan		

14PHT1010	PoojaKotwal	Quality by design for dissolution testing
Dr. P. D. Jain		
14PHT1013	AyushAditya Pal	Use of gene editing tools as therapeutic intervention for retinal degenerative disorders
Prof. S. V. Joshi		
14PHT1004	ChinmayKhanolkar	Luliconazole synthesis
Prof. K.S. Laddha		
14PHT1002	PriyankaPawar	Alpha Mangostin
Prof. V. B. Patravale		
14PHT1009	ShashankBhangde	Novel Drug delivery Systems for Iron Therapeutics
14PHT1014	HimaniGarud	Design of Dry Powder Inhalers
Prof. S. Sathaye		
14PHT1015	MrunmayeePatil	Phytochemical and Pharmacological studies of Acoruscalamus
14PHT1020	NidhiRaghuram	Metabolic Memory in Diabetes and Diabetic Complications
Dr. V. N. Telvekar		
14PHT1007	VishveshRaje	Production of API using flow chemistry
Prof. P. R. Vavia		
14PHT1012	Manan Shah	3D Printed Drug Delivery Devices

FINAL YEAR B. PHARM HOME PAPER 2017-18

Prof. Mariam S. Degani		
14PHA1020	Ankita Kshatriya	Flavonoids for the treatment of Tuberculosis
14PHA1017	Sonali Vaidya	Therapeutic strategies for neurodegenerative diseases targeting brain-urea accumulation
Prof. P. D. Amin		
14PHA1011	Kalyani Desale	Co-crystallization Approach for Solubility Enhancement of Ibuprofen
14PHA1022	Akanksha Kale	Dog Collar to Prevent Flea and Tick Infestation
14PHA1031	Saina Prabhu	Ideal FDC for Treatment of Diabetic Peripheral Neuropathy
Dr. G. U. Chaturbhuj		
14PHA1001	Deepti Mataghare	Synthesis of Pimavanserin
14PHA1005	Jesal Makwana	Chemistry of crisaborole
14PHA1009	Sanjana More	Synthesis of ozenoxacin
Dr. H. K. Chaudhari		
14PHA1004	Sanjay Malge	Efficient and one-pot synthesis of imidazole and its derivatives as an active pharmaceutical ingredient.
14PHA1016	Vaibhav Singh	A new method of synthesis for rasagiline
14PHA1023	Keyur Rane	A method for the synthesis of glipizide

Prof . P. V. Devarajan		
14PHA1029	Parth Kadakia	Intra-articular thermally sensitive biodegradable polymeric scaffold based in-situ implant injection for the treatment of Knee Osteoarthritis
Dr. P. D. Jain		
14PHA1027	Revathi Reddy	Enhancing the Yield of Monoclonal Antibodies Using a CRISPR based approach
14PHA1032	Aditya Kamat	Overcoming differential affinity of trastuzumab for FCGR3A polymorphs
Prof. S. V. Joshi		
14PHA1014	Umang Amrutkar	A new method of synthesis of cinnarizine and flunarizine
14PHA1017	Neha Pai	Synthesis of Itraconazole
Prof. K.S. Laddha		
14PHA1003	Samruddhi Subhane	Chemical Modification in Gum
14PHA1013	Saili Phulpagar	Extraction of Andrographolide
Prof. V. B. Patravale		
14PHA1002	Monil Shah	Biodegradable Microneedly-loaded Transdermal Patch: A novel approach for delivery of anti-emetic drug in microgravity
	Amol Gare	Novel Transdermal Drug Delivery for Alzheimer's Diseases
14PHA1024	Swaraj Pawar	New Drug Delivery System for Parkinson's Diseases Using Levodopa Transdermal Patch
Prof. S. Sathaye		
14PHA1012	Rupam Singh	Neural Pathway Controlling Satiety: Link between Obesity and Type 2 Diabetes
14PHA1015	Tanishka Saraf	Lipoproteins and their role in Lipid Metabolism: Implications of Mutation in Alzheimer's Disease
14PHA1028	Bilva Burkule	Role of Immunity in Neuroinflammation
Dr. V. N. Telvekar		
14PHA1006	Ajay Gawali	Development of dissolvable oral drug delivery system for Nabumetone
14PHA1008	Pradnya Ingle	Development of a lipidic drug delivery system for bioavailability improvement of poorly water soluble anti-hypertensive drug- TELMISARTAN (TEL)
13PHA1029	Sachin Kori	Development of dissolvable oral drug delivery system for Ibuprofen
Prof. P. R. Vavia		
14PHA1018	Snehal Daware	Abuse Deterrent, extended release targeted formulation of fentanyl
14PHA1030	Shruti Awari	An economic colour changing anti-infective, in-situ hydrogel for burn wound healing and regeneration

T. Y. B. PHARM SEMINAR 2017-18

Prof. Mariam S. Degani		
15PHA1008	Rajesh Dugane	Anti obesity agents recent advances
15PHA1021	Asang Borkar	Drug Transporters
Prof. P. D. Amin		
15PHA1022	Shakshi Singh	Oleogels and its applications
15PHA1025	Shweta Sabu	Hair growth promoters
15PHA1029	Tanvi Sanjay Patil	Microencapsulation of Liquids
Dr. G. U. Chaturbhuj		
15PHA1001	Pooja Naik	Anti filarial drugs
15PHA1004	Ragini Pillay	Arthritis
15PHA1012	Chaitali Shah	Leishmaniasis
Dr. H. K. Chaudhari		
15PHA1030	Aishwarya Bhasi	Antiepileptic agents
15PHA1017	Viraj Modak	Anticancer agents
15PHA1015	Sushil Lahurao Chavan	Antimalarial Drugs
Dr. P. D. Jain		
15PHA1003	Aashvi Jain	CRISPR mediated interventions for lung cancer
15PHA1019	Priyanka Yashwant Bare	Alternative to animal testing:a regulatory perspective
15PHA1026	Apurva Rajesh Pardeshi	Strategies to enhance ADCC activity of monoclonal antibodies
Prof. S. V. Joshi		
15PHA1006	Nilesh Kulkarni	Hypertension and drugs
15PHA1013	Ketaki Dhurve	Review on Synthesis of Cinnarizine and Flunarizine
Prof. K.S. Laddha		
15PHA1002	Akhil Shah	Natural Sweeteners
15PHA1007	Omkar Deshpande	Hydroponics
Prof. V. B. Patravale		
15PHA1010	Poorva Taskar	Drug Therapeutics for Glioblastoma
15PHA1027	Drashty Mehta	Drug delivery system for H Pylori
15PHA1028	Purav Shah	Marine derived skin lightening agents in cosmetics
Prof. S. Sathaye		
15PHA1031	Shreya Sunil Dalvi	Life style management for prevention of osteoporosis
15PHA1005	Sanika Naware	Management of diabetes mellitus by lifestyle changes with special emphasis on nutrition.
15PHA1024	Gauri Bhatkhande	Hair and skin serum
Dr. V. N. Telvekar		

15PHA1009	Aditya Sindhusagar Dhule	Chemical reactions using hypervalent iodine as a reagent.
15PHA1014	Pratik Gite	Hypervalent Iodine
Prof. P. R. Vavia		
15PHA1016	Priyanka Salunkhe	Biosurfactants
15PHA1020	Tejal Rajaram Varekar	Cell membrane camoflauged nanoparticle for drug delivery

POST GRADUATE STUDENTS

RESEARCH I

M. PHARM

Roll No.	Name	Research Topic	Supervisor
17PHP201	Anand Bhusare	Formulation and evaluation of microspheres containing large molecules for enhancement of bioavailability	Prof. P. R. Vavia
17PHP202	Sharvari Milind Kshirsagar	Cocrystals of Ibuprofen with Lysine and Mannitol using Hot Melt Extrusion	Prof. P. D. Amin
17PHP203	Krishna Eknath Jaybhaye	Targeted delivery to brain by using nanocarriers	Prof. V. B. Patravale
17PHP204	Apoorva Phadke	Mucoadhesive microsphere formulation for controlled release via buccal route	Prof. P. R. Vavia
17PHP205	Purva Prasad Khare	Development of posaconazole ophthalmic system	Prof. V. B. Patravale
17PHP206	Siddhesh Waman Punalekar	Targeted delivery of anti-infective drugs to the brain	Prof. P. V. Devarajan
17PHC201	Abhishekh Brijesh Sharma	Computer Aided Drug Design of DPP4 Inhibitors	Dr. G. U. Chaturbhuj
17PHC202	John Naik	Design, synthesis and evaluation of novel anti-tubercular drugs	Dr. V. N .Telvekar
17PHC203	Suraj Narayan Mali	Design and synthesis of Imidazo-(1,2a)-pyridincarboxamide derivatives as anti-mycobacterial analogues	Dr. H. K. Chaudhari
17PHC206	Nandini Asati	Computer Aided Drug Design of SGLT2 Inhibitors	Dr. G. U. Chaturbhuj
17PHC207	Prajakta Khalate	Synthesis of substituted benzhydrylamine derivatives	Prof. S. V. Joshi
17PHC208	Rohit Dubey	Targeted Design and synthesis of novel Anti-Tuberculosis Agents	Prof. M. S. Degani

17PHM201	Apurva Anilkumar Tayade	Extraction and isolation of Bixin and Norbixin from Bixaorellana	Prof. K. S. Laddha
17PHM202	Aakash Subhash Daple	Evaluation of anti-cataract activity of bioactive fraction of Saraca indica flowers through ocular route	Prof. S. Sathaye
17PHM203	Ajinkya Dukane	Modification of Starch	Prof. K. S. Laddha
17PHM204	Chetan Thingore	Evaluation of a novel entity for neuroinflammation induced memory impairment.	Prof. A. R. Juvekar
17PHM205	Nayana Tendulkar	Screening of Borneol, Ursolic acid, Rosmarinic acid for their neuroprotection in rotenone induced neurotoxicity in SH-SY5Y cell lines.	Prof. S. Sathaye
17PHM206	Viplav Vitthal Kshirsagar	Induction of Alzheimer's disease by lipopolysaccharide and evaluation of a novel therapeutic drug.	Prof. A. R. Juvekar

RESEARCH I

M. TECH. PHARMA

Roll No.	Name	Research Topic	Supervisor
17PHT201	Ajay Salunke	Chemoselective Bromination of an intermediate of Tembotrione	Dr. V. N. Telvekar
17PHT202	Akash Lingayat	Analgesic Subcutaneous Implants for Animals	Prof. P. D. Amin
17PHT203	Darshana Kamble	Investigating Flux of Chitosan based Formulation across biological Membrane	Dr. P. D. Jain
17PHT204	Ishwari Kale	Drug synthesis and characterization	Dr. G. U. Chaturbhuj
17PHT205	Mujahed Hussain Ansari	Bioenhanced drug delivery system	Prof. P. V. Devarajan
17PHT206	Prajkta Suradkar	Development of nanosuspension of BCS II drug	Prof. V. B. Patravale
17PHT207	Sourabh Khadse	Green and cost effective synthesis of p-hydroxy benzoic acid	Prof. M. S. Degani

RESEARCH I

M. TECH. IN PHARM. BIOTECH

Roll No.	Name	Research Topic	Supervisor
17PBT201	A Bidyasagar Singha	Substrates for scaffold to be used in CNS tisuue engineering	Prof. V. B .Patravale
17PBT202	Indurkar Abhishek Rajesh	Development of biopolymer scaffold for advanced wound care in diabetic foot ulcer	Dr. Prajakta D. Jain
17PBT203	Alok Kumar	Fmoc or Boc based solid phase peptide synthesis: a comparative study of different activators	Prof. S. V. Joshi
17PBT204	Atchutuni Arpitha	Biocatalytic selectivity engineering using microwave irradiated continuous flow microreactors for resolution of active pharmaceutical intermediates	Prof. G. D. Yadav
17PBT205	Bismita Sonowal	Development of nanofibers of biopolymers for high density cell culture using electrospinning technique	Dr. Prajakta D. Jain
17PBT206	Kaberi Nath	Assay for screening molecular library against infectious diseases	Prof. M. S. Degani
17PBT207	Patil Mrunalini Shankarrao	Significance of NADPH oxidase and effect of phytoconstituents on its activity	Prof. S. Sathaye
17PBT208	Parul Manoj Srivastava	Fast disintegrating oral probiotics film	Prof. P. V. Devarajan
17PBT209	Priyanka Mishra	Enhanced intracellular delivery through nanoparticle design	Prof. P. V. Devarajan

SEMINAR AND CRITICAL REVIEW

M . PHARM

Roll No.	Name	Seminar Topic	Supervisor
17PHP201	Anand Bhusare	Development of sustained release polymeric subcutaneous implants	Prof. P. R. Vavia
17PHP202	Sharvari Milind Kshirsagar	Nanotechnology: A novel realm in Ophthalmics	Prof. V. B. Patravale
17PHP203	Krishna Eknath Jaybhaye	Recent advances and challenges in microspheres formulations	Prof. P. R. Vavia
17PHP204	Apoorva Phadke	Tissue Adhesives	Prof. V. B. Patravale
17PHP205	Purva Prasad Khare	Electroporation assisted transdermal drug delivery	Prof. P. V. Devarajan
17PHP206	Siddhesh Waman Punalekar	3d printing in pharmaceutics	Prof. P. R. Vavia
17PHC201	Abhishekh Brijesh Sharma	Drugs for Bad Bugs	Dr. H. K. Chaudhari

17PHC202	John Naik	Use of 1,2,3-triazoles as bioisosteres in medicinal chemistry	Prof. M. S. Degani
17PHC203	Suraj Narayan Mali	Recent develpments in stereoselective synthesis of drugs	Dr. G. U. Chaturbhuj
17PHC206	Nandini Asati	Corey-Bakshi-Shibata Reduction	Prof. S. V. Joshi
17PHC207	Prajakta Khalate	Recent developments in stereoselective synthesis of drugs and their intermediates	Dr. G. U. Chaturbhuj
17PHC208	Rohit Dubey	Boron Chemistry and it's application in cancer treatment	Dr. V. N. Telvekar
17PHM201	Apurva Anilkumar Tayade	Recent Advances in ABeta Degrading Enzymes in Alzheimer's Disease	Prof. S. Sathaye
17PHM202	Aakash Subhash Daple	Essentiality of Mfsd2b transporter in the export of Sphingosine-1-Phosphate	Prof. A. R. Juvekar
17PHM203	Ajinkya Dukane	ubiquitn system regulators	Prof. A. R. Juvekar
17PHM204	Chetan Thingore	Plant Quarantine System.	Prof. K. S. Laddha
17PHM205	Nayana Tendulkar	Insect Juvenile Hormones and Phytojuvenoids	Prof. K. S. Laddha
17PHM206	Viplav Vitthal Kshirsagar	Insulin signalling in Alzheimer's disease: enzymes involved and possible therapeutic targets	Prof. S. Sathaye

SEMINAR AND CRITICAL REVIEW

M .TECH. PHARMA

Roll No.	Name	Topic	Supervisor
17PHT201	Ajay Salunke	Comparison of various routes of synthesis of reboxetine	Prof. M. S. Degani
17PHT202	Akash Lingayat	Microfluidizer: Mechanism and Pharmaceutical Application	Prof. V. B. Patravale
17PHT203	Darshana Kamble	Co-crystal engineering by HME technology	Prof. P. D. Amin
17PHT204	Ishwari Kale	Synthesis of Betaxolol	Prof. S. V. Joshi
17PHT205	Mujahed Hussain Ansari	Design of experiments in organic synthesis	Dr. G. U. Chaturbhuj
17PHT206	Prajkta Suradkar	Noise pollution and control in chemical industry	Dr. V. N. Telvekar
17PHT207	Sourabh Khadse	Transmembrane diffusion and transfer of drug through synthetic membrane	Dr. Prajakta D. Jain

SEMINAR AND CRITICAL REVIEW

M. TECH. IN PHARM. BIOTECH.

Roll No.	Name	Topic	Supervisor
17PBT201	A Bidyasagar Singha	Case Study on Biopharmaceutical Products	Prof. S. Sathaye
17PBT202	Indurkar Abhishek Rajesh	Biomimetic medical devices and materials	Prof. G. D. Yadav
17PBT203	Alok Kumar	Peptide based Therapeutics	Prof. M. S. Degani
17PBT204	Atchutuni Arpitha	Tissue Engineered Skin for Diabetic Foot Ulcer	Dr. Prajakta D. Jain
17PBT205	BismitaSonowal	Role of Enzymes in Antibacterial Drug Discovery	Prof. S. V. Joshi
17PBT206	Kaberi Nath	Mimicking Blood Brain Barrier in vitro	Prof. V. B. Patravale
17PBT207	PatilMrunaliniShankarrao	Selector Free Separation of Chiral Molecules	Prof. G. D. Yadav
17PBT208	Parul Manoj Srivastava	Engineering Challenges in High Density Cell Culture Systems	Dr. Prajakta D. Jain
17PBT209	Priyanka Mishra	Polyketide synthase: Analysis and Use in synthesis	Prof. S. V. Joshi

RESEARCH TOPICS (THESIS WORK)

PH. D. (TECH.)

No.	Research Scholar	Previous Institute	Project	Supervisor
1.	Bochare Machhindra	NDMVP College of Pharmacy, Nashik	Development of synthetic methods for organofluorine compounds	Professor M. S. Degani
2.	Lonkar Sachin	Dr. D. Y. Patil College of Pharmacy, Pune	Synthesis of Phase-II metabolites by Green methods	Professor M. S. Degani
3.	ShelkeRupesh	Govt. College of Pharmacy, Aurangabad	Design and synthesis of novel multi-targeting anti-infectives	Professor M. S. Degani
4.	Mahin K. I	IIRBS Kottayam	Synthesis of molecules targeting latent / MDR tuberculosis	Professor M. S. Degani
5.	Mali Hemlata	NDMVP College of Pharmacy, Nashik	Design, synthesis and evaluation of Nitrogen containing heterocycle as antimycobacterial agents	Professor M. S. Degani
6.	Khambete Mihir	ICT	Design and Synthesis of Molecular libraries for Alzheimer's disease	Professor M. S. Degani

7.	Patel Sagar	ICT	Newer techniques for synthesis of organofluorine compounds	Professor M. S. Degani
8.	Anantram Aarti	KMK College of Pharmacy, Mumbai	Targetting cellular pathways for the design and synthesis of novel anticancer compounds	Professor M. S. Degani
9.	Agre Neha	ICT	Design, synthesis and biological evaluation of antituberculosis agents	Professor M. S. Degani
10.	De Suparna	SCOP, Vadgaon, Pune	Lead optimization of molecules for Tuberculosis	Professor M. S. Degani
11.	Chatale Bandoo	NIPER, Mohali	Taste Masking by inhibition of taste receptors	Professor M. S. Degani
12.	Chaudhari Kapil S.	UDCT, Jalgaon	Design, Synthesis and Applications of novel dendritic lipids	Professor K. G. Akamanchi
13.	Snehalata Autade	ICT	Transition metal catalyzed transformation for synthesis of drug(s) and intimidate(s)	Professor K. G. Akamanchi
14.	KhatikTausif	UICT Jalgaon	Development if Novel Sustained release formulation by Using Hot Melt Extrusion	Professor P. D. Amin
15.	SuryawanshiDilip	BCP	Development and Evaluation of Innovative Bio enhanced Formulations.	Professor P. D. Amin
16.	ShindeUmesh	ICT	Hot Melt Extrusion in Novel Drug Delivery system	Professor P. D. Amin
17.	JhaDurgesh	ICT	Topic Approval Awaited	Professor P. D. Amin
18.	Shah Devanshi	ICT	Topic Approval Awaited	Professor P. D. Amin
19.	Khatal Trupti	NMU	An Invention of Distinctive Anti-Cancer drug: Its Design, Synthesis and Evaluation	Dr. Ganesh U. Chaturbhuj
20.	Patil Manisha	NMU	Design, synthesis and evaluation of peripherally restricted cannabinoid receptor 2 selective agonist for treatment of neuropathic pain	Dr. Ganesh U. Chaturbhuj
21.	Wani Rucha	-	Design, Synthesis and Evaluation of Novel Nitrogen Containing Heterocycles as anti-infective agents	Dr. H. K. Chaudhari

22.	Joshi Bhagyashri	Mumbai Education Trust Institute of Pharmacy	Drug Adsorption Models for predicting Bioenhancement Strategies for Poorly Permeable Drugs	Professor P.V. Devarajan
23.	Chawla Shweta	ICT	Inorganic Nanocarriers in drug delivery and diagnosis	Professor P.V. Devarajan
24.	Jahagirdar Priyanka	ICT	Nano drug delivery systems for targeted delivery of anti-tubercular agents	Professor P.V. Devarajan
25.	Das Saugandha	JSS, Mysore	Nanocarriers for targeted drug delivery to the RES	Professor P.V. Devarajan
26.	More Krantisagar	Sinhagad College of Pharmacy, Vadgaon	Nanotechnology approaches for bioenhanced delivery of nutraceuticals and nutraceutical drug combinations	Professor P.V. Devarajan
27.	MaithaniaHeena	KMKCP	Nanoparticulate drug delivery systems for targeted therapy of infectious diseases	Professor P.V. Devarajan
28.	Kotak Darsheen	Ramanbhai Patel Institute of Pharmacy, Charotar University	Nanocarriers for Bioenhanced and Targeted Delivery in Osteoporosis.	Professor P.V. Devarajan
29.	Joshi Harsh	Shri Sarvajanik Pharmacy College	Formulation of Controlled and Novel Drug Delivery systems	Professor P.V. Devarajan
30.	John Rijo	Amrita institute of medical science and research centre	Formulation Development of In Situ Nanosuspension	Professor P.V. Devarajan
31.	Wavhule Pradip	SGRS college of Pharmacy, Pune	Microwave assisted Drug Delivery Systems	Professor P.V. Devarajan
32.	Vinod Ipar	UICT,Jalgaon	Bioenhanced Nutraceutical Delivery System	Professor P.V. Devarajan
33.	Lokhande Amit	ICT, Mumbai	Inhalable Nanocarrier based Drug Delivery System for Lung Targeting	Professor P. V. Devarajan
34.	Shevade Sukhada	Bombay College of Pharmacy	Long Acting Parenteral Depot Systems for Alzheimer's Disease Mumbai	Professor P. V. Devarajan
35.	Attar Sabir	Nagpur University	Study of Toxicology and Genotoxicity of L-DOPA and Hyoscine in combination therapy	Professor A. R. Juvekar
36.	Bulani Vipin	D Y P IPSR, Pune	Evaluation of bioactive complex for their anti-inflammatory activity	Professor A. R. Juvekar

37.	Kothavade Pankaj	D Y P IPSR, Pune	Pharmacological investigation of Achyranthes aspera linn. and Celastrus peniculatus willd. for anti-inflammatory and anti-arthritis activity	Professor A. R. Juvekar
38.	Khatri Dharmendra	ICT, Mumbai	Investigations on Natural Bio-active Compounds for their Anti-Parkinson Potential	Professor A. R. Juvekar
39.	Gawali Nitin	U.D.P.S. Nagpur	Neuropharmacological effect of Agmatine, a neuropeptide, on anxiety and related disorders"	Professor A. R. Juvekar
40.	Chowdhury Amrita	ICT, Mumbai	Evaluation of neuropharmacological profile of naturally occurring compounds in neurodegenerative disorders	Professor A. R. Juvekar
41.	Gursahani Malvika	BVP, Mumbai	Evaluation of biologically active compounds in neurodegenerative disorders	Professor A. R. Juvekar
42.	Pai Sarayu	BCP, Mumbai	Evaluation of phytoconstituents in obesity and it's complications	Professor A. R. Juvekar
43.	Yadav Vijay	Dr. L.H. Hiranandani College of Pharmacy	Green synthesis and study of metal nanostructures for biomedical applications	Dr. Prajakta Dandekar Jain
44.	Chhabra Rohan	Jaypee Institute of Information Tchnology, Delhi	Bioprocessing Of Scaffolds For Tissue Engineering	Dr. Prajakta Dandekar Jain
45.	Krishnan Akhil	Sastra University	Green processes for producing low molecular weight polysaccharide polymer and fabricating their nanocarriers for biomedical applications	Dr. Prajakta Dandekar Jain
46.	Bangde Prachi	ICT	In Process	Dr. Prajakta Dandekar Jain
47.	Dobhal Anurag	IIIT	In Process	Dr. Prajakta Dandekar Jain
48.	LalitKhare	ICT	In Process	Dr. Prajakta Dandekar Jain
49.	Aditya Narvekar	University of Mumbai	In Process	Dr. Prajakta Dandekar Jain
50.	Prashant Shinde	-	Studies on coumarins	Professor K. S. Laddha

51.	Snehal Bhandare	MGV's Pharmacy College	Natural Flavonoids: Their extraction, isolation and its chemical modification	Professor K. S. Laddha
52.	Poonam Agrawal	ICT	Studies on Proto alkaloids	Professor K. S. Laddha
53.	Meenakshi Akhade	ICT	Studies on Quinazoline and Pyridine alkaloids	Professor K. S. Laddha
54.	Sapna Patil	Bhartiya Vidyapeeth College of Pharmacy, Pune	Studies on Iridoids- Its isolation, Extraction and chemistry	Professor K. S. Laddha
55.	Subodh Gangurde	NDMVP Nasik	Extraction,isolation and chemical modification of anthraquinones from senna and aloe	Professor K. S. Laddha
56.	Shefali Thakkar	Maliba pharmacy college	Chemical investigation and establishing quality control standards of asphaltum.	Professor K. S. Laddha
57.	Swami Megha	AISSMS College of Pharmacy, Pune	Nanoengineered particulate carriers of antimalarials using novel techniques	Professor V. B. Patravale
58.	Mohurle Swapnil	IIT, Bombay	Anti-amyloid agents loaded nanocarriers via intranasal route for alzheimer's disease treatment	Professor V. B. Patravale
59.	PrabhuRashmi	ICT, Mumbai	Functionalized non-viral vectors for breast cancer therapy	Professor V. B. Patravale
60.	GiteSandip	UDCT, Aurangabad	Development and scale up of novel controlled release dosage forms	Professor V. B. Patravale
61.	Kadwadkar Namrata	Bombay college of Pharmacy, Mumbai	Novel drug delivery for targeting Hemoglobinopthies	Professor V. B. Patravale
62.	Mirani Amit	BharatiVidyapeeth College of Pharmacy, Navi Mumbai	Microbicidalnanotherapeutics for HIV/AIDS	Professor V. B. Patravale
63.	Bhuptani Ronak	Bombay college of Pharmacy, Mumbai	Novel carrier systems for improved topical delivery	Professor V. B. Patravale
64.	Agrawal Ankit	ICT, Mumbai	Development of innovative micromachined macrostructures for enhanced drug delivery	Professor V. B. Patravale
65.	Kharkar Prachi	ICT, Mumbai	Nanoengineered systems for oncotherapy	Professor V. B. Patravale
66.	Sane Mangesh	UDCT, Aurangabad	Development and evaluation of vascular scaffolds	Professor V. B. Patravale

67.	Naik Shivraj	North Maharashtra University, Jalgaon	Development of Novel Drug Delivery Systems for neurodegenerative diseases	Professor V. B. Patravale
68.	Chogale Manasi	SVC college of Pharmacy, Mumbai	Novel Formulations for the Therapy of Tuberculosis	Professor V. B. Patravale
69.	GhodakeVinod	Sinhgad Institute, Pune	Dry Powder Inhaler for Cystic Fibrosis Infections	Professor V. B. Patravale
70.	Dhoble Sagar	Bombay college of Pharmacy, Mumbai	Dry Powder Inhaler for Pulmonary Hypertension	Professor V. B. Patravale
71.	Pawar Rohit	NMIMS University, Mumbai	Development of novel diagnostic and treatment modules for dengue	Professor V. B. Patravale
72.	Dhage Shrikant	BharatiVidyapeeth College of Pharmacy, Navi Mumbai	Nutraceutical delivery using novel excipients	Professor V. B. Patravale
73.	Upadhaya Prashant	AISSMS college of pharmacy, Pune	Intranasal colloidal formulations for diagnostic and therapeutic applications	Professor V. B. Patravale
74.	Kakade Pratik	TatyasahebKore college of pharmacy, Warnanagar	Smart lipidic nanocarrier system for topical delivery	Professor V. B. Patravale
75.	Pandya Anjali	C. U. Shah College of Pharmacy, S.N.D.T. Women's University, Mumbai	Awaited	Professor V. B. Patravale
76.	Pherwani Pooja	Grant Medical College, Mumbai	Pharmacology of coumarin derivative and plant part containing the same in osteoporosis	Prof. Sadhana Sathaye
77.	Ghumatkar Priya	SPPSPTM, NMIMS, Mumbai	Screening of New therapeutic entities in Alzheimer's disease.	Prof. Sadhana Sathaye
78.	Sarvaiya Devang	Bombay College of Pharmacy, Mumbai	Pharmacokinetic and pharmacodynamic evaluation of therapeutic moieties as an adjunct immunotherapy in tuberculosis	Prof. Sadhana Sathaye
79.	Peshattiwar Vaibhavi	Bombay College of Pharmacy, Mumbai	Evaluation of phytoconstituents for its antiparkinson's activity	Prof. Sadhana Sathaye
80.	Muke Suraj	MVPs college of Pharmacy, Nashik	Isolation and purification of wedelolactone from herbal source for its potential anti-epileptic activity	Prof. Sadhana Sathaye
81.	Kaikini Aakruti	Bharati Vidyapeeth's College of Pharmacy, Mumbai	Investigation of Potential therapeutic moieties in diabetic complications	Prof. Sadhana Sathaye

82.	Bagle Sneha	Principal K. M. Kundanani College of Pharmacy, Mumbai	Pharmacological evaluation of Potential therapeutic entities for anti-Alzheimer activity	Prof. Sadhana Sathaye
83.	Jadhav Nitin	ICT, Mumbai	Novel carrier based drug delivery system	Professor Pradeep Vavia
84.	Ingle Subhash	NIPER, Mohali	Silica based drug delivery system	Professor Pradeep Vavia
85.	Mahajan Ketan	UDCT, NMU Jalgaon	Polyelectrolyte multilayered systems for the treatment of infectious diseases	Professor Pradeep Vavia
86.	Patel Mayank	BharatiVidyapeeth's College Of Pharmacy	Modified Cyclic oligosaccharides based drug delivery system for anticancer drug	Professor Pradeep Vavia
87.	Jadhav Pankaj	ICT, Mumbai	Studies on application of amorphisation approaches for designing efficient	Professor Pradeep Vavia
88.	Monpara Jasmin	ICT, Mumbai	Advanced nanocarrier system for targeted delivery of antineoplastic agent	Professor Pradeep Vavia
89	Shevalkar Ganesh	UDCT, NMU Jalgaon	Lipid based nanocarrier system for poorly bioavailable drugs	Professor Pradeep Vavia
90	Yadav Nisha	C.U. Shah College of Pharmacy, Mumbai	Development of nanocarrier for enhanced brain delivery	Professor Pradeep Vavia
91	Prajapati Mahendra	NIPER, Mohali	Surface modified targeted nanocarrier for anticancer drug delivery	Professor Pradeep Vavia
92	Patil Mrunal	R. C. Patel College Of Pharmacy, Shirpur	Formulation and evaluation of nanocarriers for infectious diseases	Professor Pradeep Vavia
93	Pai Rohan	Bombay College of Pharmacy, Mumbai	Surface modified nanocarriers as drug delivery systems	Professor Pradeep Vavia
94.	Ganapati Sita	VES's College of Pharmacy, Mumbai	Lipidic nanocarriers as drug delivery systems	Professor Pradeep Vavia
95.	Jadhav Dhananjay	UDCT, NMU, Jalgaon	Cyclodextrin based drug delivery systems for Rheumatoid Arthritis	Professor Pradeep Vavia
96.	Rojekar Satish	ICT, Mumbai	Nano drug delivery system for antiretroviral drugs	Professor Pradeep Vavia
97.	Pawar Manoj Ashok	ICT, Mumbai	Development of Controlled Release (CR) formulation of Natural Highly Purified Human Chorionic Gonadotropin (hCG)	Professor Pradeep Vavia

INTEGRATED PH. D. (TECH.)

No.	Research Scholar	Previous Institute	Project	Supervisor
1.	Mestry Snehal	ICT, Mumbai	Phytochemical and Pharmacological investigations of Punica Granatum Linn. In Diabetic Nephropathy	Professor A. R. Juvekar
2.	Gore Manish	ICT	In Process	Dr. Prajakta Dandekar Jain

PH. D. (SCI.)

No.	Research Scholar	Previous Institute	Project	Supervisor
1.	Sabale Sandip	AbasahebGaraware College of Arts & Science, Pune	Green approach towards synthesis of pharmaceutically important compounds	Professor M. S. Degani
2.	Wagh Ganesh	Pune University	New reaction systems for synthesis of drugs and intermediates	Professor K. G. Akamanchi
3.	Koli Uday	SIES College of Arts, Science & Commerce	Nucleic acid Loaded Nanoplexes for Biomedical Applications	Dr. Prajakta Dandekar Jain
4.	Talkar Swapnil	Ruia College, Mumbai	Gene Delivery for Cancer Therapeutics	Prof. V.B. Patravale

M. PHARM RESEARCH PROJECTS

No.	Research Scholar	Previous Institute	Project	Supervisor
1.	Yadav Krishna	St.John Insttiute of pharmacy,Mumbai	Design, synthesis and evaluation of DAP antimetamolites	Professor K. G. Akamanchi
2.	Shah Devanshi	BCP Mumbai	Formulation Development of Topical Dosage form using Hot met extrusion	Professor Purnima Amin
3.	BardeAnagha	UICT Aurangabad	Enteric Coating of Tablets and Pellets with different polymers	Professor Purnima Amin
4.	Oholkar Sheetal M	Government College of Pharmacy, Aurangabad	Pulmonary Drug Delivery by Nebulization	Professor P.V. Devarajan
5.	PunalekarSiddhesh	Bombay College of pharmacy (BCP)	Targeted Delivery of Anti-infective Drugs to the Brain	Professor P.V. Devarajan
6.	Rakh Limbraj	DCOP Latur	Extraction &isolation of Azadirachtin from seeds of Azadirachta Indica	Professor K. S. Laddha
7.	Tayade Apurva	ICT	Isolation of bixin	Professor K. S. Laddha
8.	Dukane Ajinkya	Govt.college Karad	Modification of starch	Professor K. S. Laddha

9.	KharePurva	Institute of Chemical Technology, Mumbai	Awaited	Professor V.B. Patravale
10.	Jaybhaye Krishna	Dr. VitthalraoVikhePatil College of Pharmacy, Ahmednagar	Awaited	Professor V.B. Patravale
11.	Jain Vishu	Shri G.S. Institute of Technology and Science	Screening of Thymol and Naringenin for antioxidant potential against Glucose induced oxidative stress	Prof. Sadhana Sathaye
12.	Mulange Shubham	Savitribai Phule Pune University	Evaluation of Phytoconstituents for anti Parkinson Activity	Prof. Sadhana Sathaye
13.	Daple Aakash	Institute of Chemical Technology	Evaluation of anti-cataractogenic activity of bioactive fraction of Saraca Indica using in-vitro and in-vivo studies.	Prof. Sadhana Sathaye
14.	Tendulkar Nayana	Institute of Chemical Technology	In vitro evaluation of borneol ,ursolic acid, rosmarinic acid for their neuroprotection in rotenone induced neurotoxicity in SHSY5Y cell line.	Prof. Sadhana Sathaye
15.	Bhusare Anand	Department of Pharmaceutical Sciences- RTM, Nagpur University, Nagpur	Formulation and Evaluation of sustained release protein microspheres	Prof. Pradeep Vavia
16.	Phadke Apoorva	Bombay College of Pharmacy, Mumbai	Microsphere based buccal formulation	Prof. Pradeep Vavia
17.	Reyniel Ben Carvalho	-	Mechanochemical Synthesis of Pharmaceutically Important Compounds	Professor S. V. Joshi
18.	Pritam V. Bagwe	-	Synthesis and Process optimization of Alpha Glycerylphosphorylcholine - (Alpha -GPC)	Professor S. V. Joshi
M. TECH. RESEARCH PROJECTS				
19.	Sannake Manisha M	ICT, Mumbai	Brain Targeted Drug Delivery Systems	Professor P. V. Devarajan
20.	Ansari Mujahed	UDCT, Aurangabad	Bioenhanced Drug Delivery System	Professor P. V. Devarajan
21.	Prarthana Mistry	UDCT Aurangabad	Fabrication and characterization of starch-TPU based nanofibers for wound healing applications	Dr. Prajakta Dandekar Jain

22.	Eram Sheikh	Rizvi college of engineering	Hydrophobic deep eutectic solvent as a green technique for extracting ergosterol from mushroom	Dr. Prajakta Dandekar Jain
23.	Varhade Amruta	MGM Kalamboli	Separation of volatile oil from mammia suriga	Professor K. S. Laddha
24.	Dharmadhikari R.K.	Food technology Parbhani	Saparation,Isolation and charactarisation of essential oils and caumarins	Professor K. S. Laddha
25.	Ambure Saurabh	MIT college Pune	saparation of volatile oil and its components from piper cubeba	Professor K. S. Laddha
26.	Bhumbe Govind	Food technology Parbhani	Separation of gingerol form ginger	Professor K. S. Laddha
27.	A BidyasagarSingha	Institute of Science & Technology, Gauhati University	Awaited	Professor V. B. Patravale
28.	SuradkarPrajakta	UDCT, Aurangabad	Awaited	Professor V. B. Patravale
29.	Batabyal Paramita(M. Tech. Pharm	Dr. D.Y. Patil Institute of biotechnology,Pune	In silico studies on xanthine oxidase	Dr. Sadhana Sathaye
BPT				
30.	Bhat Ganesh	B.V.B College of Engineering and Technology	Extraction and Purification of Arecholine	Prof. Sadhana Sathaye
31.	SaidaneSayali	Poona college of Pharmacy, Pune	Purification of Ursolic acid from tulsi and Apple peels	Prof. Sadhana Sathaye

M. TECH (PHARMACEUTICAL BIOTECHNOLOGY)

No.	Research Scholar(Beginning with Last name)	Previous Institution	Project	Supervisor
1.	Jadhav Pramod M	Tatyasaheb Kore Institute of Engineering & Technology, Warnanagar, Kolhapur	Point of Care Test Kit for Pregnancy Detection in Cattle	Prof. P. V. Devarajan
2.	Vegad Hiral M	Sinhagad Institute of Technology, Pune	Nanoparticles as Immune Adjuvants	Prof. P. V. Devarajan
3.	ShrivastavaParul	SJCE Mysore	Fast Disintegrating Oral Probiotics Films	Prof. P. V. Devarajan
4.	Mishra Priyanka	AMITY University, UP	Enhanced Intracellular Delivery through Nanoparticle Design	Prof. P. V. Devarajan

5.	NagendraGowada	M.S. Ramaiah institute of technology	Optimization of cell culture process by DOE for the production of monoclonal antibody	Dr. Prajakta Dandekar Jain
6.	Nikita Aware	ICT	Exploring polymethylmethacrylate copolymer for developing microcarrier scaffold for mammalian cell culture	Dr. Prajakta Dandekar Jain
7.	Sagar Ingle	Government college of pharmacy Amaravati	HMF production using solid acid as catalyst	Dr. Prajakta Dandekar Jain
8.	Prarthana Mistry	UDCT Aurangabad	Fabrication and characterization of starch-TPU based nanofibers for wound healing applications	Dr. Prajakta Dandekar Jain
9.	MalvankarSafala	Bombay College of Pharmacy	Role of Xanthine Oxidase in inflammatory conditions	Prof. Sadhana Sathaye
10.	Patil Mrunalini	KIT's College of Kolhapur	In silico and in vitro studies on NADPH oxidase	Prof. Sadhana Sathaye

M. SC. IN SCI.

No.	Research Scholar (Beginning with Last name)	Previous Institution	Project	Supervisor
1.	Sagar Saha (Ms. In Pharmacuetial Sciences)	Jadavpur University	Evaluation of anti-parkinson activity of a bio-enhanced formulation of Leuteolin in Zebra fish	Prof. Sadhana Sathaye / Prof. Padma Devrajan
2.	Smit Shah (Ms. In Pharmacuetial Sciences)	L. M. College of Pharmacy	Evaluation of anti-epileptic activity of a bio-enhanced formulation of Ajwain oil in Zebra fish	Prof. Sadhana Sathaye / Prof. Padma Devrajan

POSTDOCTORAL/PH.D. STUDENTS'

No.	Research Scholar (Beginning with Last name)	Previous Institution	Project	Supervisor
1.	Pulakkat Sreeranjini	Indian Institute of Science, Bangalore	Intranasal administration of multifunctional nanocarriers incorporating temozolomide and lactoferrin to combat glioblastoma multiforme	Professor V. B. Patravale

GOVERNMENT PROJECT

1	**Sponsor**	**BRNS**
	Title	Design, synthesis and evaluation of 18F ligands for diagnosis of Alzheimer's disease
	Duration	2011-2015
	Total amount	18,72,265/-
	Principal Investigator	Prof. Mariam Degani
	Research Fellows	Harish Kundaikar, ArunBhusari
2	**Sponsor**	**TEQIP**
	Title	Microwave assisted Halogenation reactions using flow reactor
	Duration	2013
	Total amount	27,00,000/-
	Principal Investigator	Mariam Degani
	Research Fellows	Macchindra Bochare, Sagar Patel
3	**Sponsor**	**UDCT Golden Jubilee**
	Title	Fabrication of Dry Glove Box for Medicinal Chemistry Lab
	Duration	2014
	Total amount	75,000/-
	Principal Investigator	Mariam Degani
	Research Fellows	Macchindra Bochare
4	**Sponsor**	**Government (UGC Start up Grant)**
	Title	Design and synthesis of novel antitubercular agents
	Duration	Two Years
	Total amount	10,00,000/-
	Principal Investigator	Dr H K Chaudhari
	Research Fellows	Self

5	**Sponsor**	**DST Prime Ministers Fellowship with Zim Laboratories, Nagpur**
	Title	Design and Development of Non-invasive Drug Delivery System for Large Molecules.
	Duration	2015-2018 (3 yrs)
	Total amount	Rs.24 Lakhs
	Principal Investigator	Prof. Padma V. Devarajan
	Research Fellows	Mr. Darsheen J Kotak
6	**Sponsor**	**Department of Biotechnology (DBT), Govt. of India.**
	Title	Early Translational study of orally administered nanoparticulate carriers for pulmonary targeting of antitubercular drug combinations
	Duration	2013-2017
	Total amount	Rs. 1,01,49000
	Principal Investigator	Prof. Padma V. Devarajan
	Research Fellows	Mr. Sagar Sudhakar Bachhav
7	**Sponsor**	**Indian Council of medical Research (ICMR), Govt. of India.**
	Title	Preclinical testing for the safety of synthetic peptide 1 of 80kDa HAS for the development of Anti-fertility vaccine
	Duration	2015-2018 (3yrs)
	Total amount	Rs. 12 Lakhs
	Principal Investigator	Prof. Padma V. Devarajan
	Research Fellows	Ms. Vrushali Pathak
8	**Sponsor**	**Department of Science and Technology (DST-RFBR), Govt. of India.**
	Title	Artificial Sensory systems for optimizing palatability of paediatric formulations. Taste masking enabled by Computer aided modelling and use of artificial sensory system.
	Duration	2015-2018 (2 yrs)
	Total amount	Rs. 25.27 Lakhs
	Principal Investigator	Prof. Padma V. Devarajan
9	**Sponsor**	**Department of Atomic Energy (DAE)-Board of Research in Nuclear Sciences (BRNS), Govt. of India.**
	Title	Innovative formulations of Radioprotectors and Immunomodulators developed in BARC
	Duration	2015-2018 (3 yrs)
	Total amount	Rs. 32.52 Lakhs
	Principal Investigator	Prof. Padma V. Devarajan
	Research Fellows	Mr. Tanmayee Machiraju
10	**Sponsor**	**Indian Council of Medical Research**
	Title	Quality Standards of Indian Medicinal plants and Preparation of Monographs thereon

	Duration	Three years (2012-2015)
	Total amount	Rs.31,51,539/-
	Principal Investigator	Prof. K. S. Laddha
	Research Fellows	Mr. Awdhut Pimple
11	**Sponsor**	**Rajiv Gandhi Science and Technology Commission**
	Title	Developing technology for extraction and isolation of Anti-Arthritic drugs from plants indigenous to Maharashtra.
	Duration	Two years (2013-2015)
	Total amount	Rs. 55,16,999/-
	Principal Investigator	Prof. K. S. Laddha
	Research Fellows	Miss Pooja Bowlekar
12	**Sponsor**	**Rajiv Gandhi Science and Technology Commission**
	Title	Extraction of Volatile oil from Orange Peels, Separation of Limonene from it and its Industrial Applications
	Duration	One and half year (2015-2017)
	Total amount	Rs. 19,49,250/-
	Principal Investigator	Prof. K. S. Laddha
	Research Fellows	To be appointed
	Duration	Two years (2013-2015)
13	**Sponsor**	**Board of Research in Nuclear Sciences (BRNS)**
	Title	Intranasal colloidal formulations for diagnostic and therapeutic Applications
	Duration	2016-2019
	Total amount	24,40,400/-
	Principal Investigator	Prof. V. B. Patravale
	Research Fellows	PrashantUpadhaya
14	**Sponsor**	**Department of Scientific and Industrial Research (DSIR)**
	Title	Development of Controlled Release (CR) formulation of Natural Highly Purified Human Chorionic Gonadotropin (hCG)
	Duration	36 months
	Total amount	159.55 lakhs (INR)
	Principal Investigator	Prof. P. R. Vavia
	Research Fellows	Pawar Manoj Ashok

INDUSTRIES:

1	**Sponsor**	**Spring Bank Pharma, MA, USA**
	Title	Medicinal Chemistry Services
	Duration	2014
	Total amount	Approx. 7,00,000/-
	Principle Investigator	Mariam Degani

	Research Fellows	Mihir Khambete, NehaAgre
2	**Sponsor**	**Merck India Pvt Ltd**
	Duration	12 months
	Total amount	Rs 14 lacs
	Principle Investigator	Prof. P.D. Amin
3	**Sponsor**	**BASF India Ltd**
	Duration	6 months
	Total amount	Rs3 Lac
	Principle Investigator	Prof. P.D. Amin
4	**Sponsor**	**LifescentInc USA**
	Duration	12 months
	Total amount	Rs8Lacs
	Principle Investigator	Prof. P.D. Amin
5	**Sponsor**	**Cheryl Laboratories Pvt Ltd**
	Duration	6 months
	Total amount	Rs3.5Lacs
	Principle Investigator	Prof. P.D. Amin
6	**Sponsor**	**Salicylates & Chemicals Pvt Ltd**
	Duration	6 months
	Total amount	Rs5Lacs
	Principle Investigator	Prof. P.D. Amin
7	**Sponsor**	**Bajaj Healthcare Ltd**
	Duration	12 months
	Total amount	Rs4Lacs
	Principle Investigator	Prof. P.D. Amin
8	**Sponsor**	**Phoenix Pharmeceuticals, LA, USA**
	Title	Formulation of controlled and novel drug delivery systems
	Duration	2013-2017 (4 yrs)
	Total amount	US $ 34,000
	Principal Investigator	Prof. Padma V. Devarajan
	Research Fellows	Mr. Harsh Joshi
9	**Sponsor**	**Phoenix Pharmeceuticals, LA, USA**
	Title	Controlled Drug Delivery systems
	Duration	2014-2017 (3 yrs)
	Total amount	US $ 34,000
	Principal Investigator	Prof. Padma V. Devarajan
	Research Fellows	Mr. Rijo John

10	**Sponsor**	**M/s. Total Herb Solutions P.ltd**
	Title	Development of analytical method for Herbal drugs and formulations
	Duration	6 months (2014 - 2015)
	Total amount	Rs. 50,000/
	Principal Investigator	Prof. K. S. Laddha
	Research Fellows	-
11	**Sponsor**	**M/s Sheekharr Starch Private Limited**
	Title	Development of modified starch.
	Duration	One year (2015 - 2016)
	Total amount	Rs. 3,20,000/
	Principal Investigator	Prof. K. S. Laddha
	Research Fellows	-
12	**Sponsor**	**M/s, Avenir Industries FZE**
	Title	Studies on Thaumatin, its formulation and stability studies."
	Duration	One year (2015 - 2016)
	Total amount	10,000 USD
	Principal Investigator	Prof. K. S. Laddha
	Research Fellow	Ms. Archana Variyar
13	**Sponsor**	**Morsef Pharmaceuticals Pvt. Ltd.**
	Title	Development of some generic products
	Duration	2017-2018
	Total amount	3,54,000/-
	Principal Investigator	Prof. V. B. Patravale
	Research Fellows	NA
14	**Sponsor**	**Amaterasu Lifesciences LLP**
	Title	Development of antichafing gel formulation
	Duration	2017-2018
	Total amount	5,75,000/-
	Principal Investigator	Prof. V. B. Patravale
	Research Fellows	NA
15	**Sponsor**	**Ferring Pharmaceuticals**
	Title	Formulation and characterization of SMEDDS for oral delivery
	Duration	2017-2018
	Total amount	47,72,500/-
	Principal Investigator	Prof. V. B. Patravale
	Research Fellows	NA

16	**Sponsor**	**Zeus Hygia life sciences pvt. Ltd.**
	Title	Pharmacokinetic study of beta carotene test formulation
	Duration	3 months
	Total amount	44869.50
	Principal Investigator	Prof. Sadhana Sathaye
	Research Fellows	Sneha Bagle
17	**Sponsor**	**Johnson and Johnson Pvt. Ltd**
	Title	Development of Novel stimuli responsive delivery system
	Duration	15 Months
	Total amount	INR 33,13,125.
	Principal Investigator	Prof. P. R. Vavia
	Research Fellows	-
18	**Sponsor**	**Nippon Synthetic Chemicals Ltd. Japan**
	Title	Testing and evaluation of performance of NSC's proprietary materials
	Duration	-
	Total amount	30,000 $
	Principal Investigator	Prof. Pradeep R. Vavia
	Research Fellows	Pankaj Hanumantrao Jadhav

DETAILS OF NATIONAL AND INTERNATIONAL COLLABORATIONS

NATIONAL COLLABORATIONS

1. Tata Institute of Fundamental Research, Mumbai
2. National Institute for Research in Reproductive Health, Parel, Mumbai
3. National Institute of Immunohaematology, Mumbai
4. Radiation Medicine Centre, Tata Hospital, Parel, Mumbai
5. National JALMA Institute of Leprosy & Other Mycobacterial Diseases, Agra
6. Advanced Centre for Treatment, Research & Education in Cancer (ACTREC), Navi Mumbai
7. Post graduate Institute of Veterinary and Animal Sciences, Akola
8. Bombay Veterinary College, Mumbai
9. Govt. Dental College, Mumbai
10. Bhabha Atomic Research Centre (BARC), Mumbai
11. IIT, Delhi
12. CDRI, Lucknow
13. NIIH, Mumbai
14. National Burns Centre, Navi-mumbai
15. National Institute of Mental Health and NeuroSciences, Bangalore.
16. Department of Biosciences and Bioengineering, IIT Mumbai.
17. G.S. Medical College, Mumbai.
18. KEM Hospital, Mumbai.
19. National AIDS research Institute, Pune.
20. Nanobios lab, IIT Bombay
21. Department of Biochemistry and Jamunalal Bajaj Tropical Disease Research centre, Mahatma Gandhi institute of Medical Sciences, Sevagram, Wardha-442102, Maharashtra, India.
22. Amity University, Noida

INTERNATIONAL UNIVERSITY/ INSTITUTE

1. National Facility for Biopharmaceutical. Evaluation of Topical formulation for the treatment of Psoriasis.
2. St. Petersburg ITMO University, Russia
3. University of Bradford, UK
4. Berlin, Germany
5. University of Geneva, Switzerland
6. University of Tokyo, Japan
7. Hoshi University, Japan
8. University of Bradford, UK
9. Discipline of Pharmaceutical Sciences, School of Health Sciences, University of KwaZulu-Natal, Durban, KwaZulu-Natal, South Africa.
10. Aix-Marseille University, CNRS, Interdisciplinary Center of Nanoscience of Marseille, UMR 7325, 13288 Marseille, France.
11. University of Delaware, USA.
12. Miami University, USA.
13. Atlanta Georgia, USA.
14. Neopharma Limited, UK
15. Birbeck University of London.
16. Open Innovation Drug Discovery, Eli Lilly and Company, Lilly Corporate Center, Indianapolis, IN 46285, USA
17. King's College London.
18. Newton-Bhabha Placement program with UK universities:
    i. Strathclyde University, Glasgow, UK
    ii. The Sheffield university: Prof. Gillian Tozer and Dr. ChrysoKanthou of The tumor microcirculation group and medical school
    iii. Queen's University, Belfast, UK: Prof Ryan Donnelly of School of Pharmacy
    iv. University of Turine, Italy: Francesco Trotta, Michele Trotta, Roberta Cavalli.

BOOK CHAPTERS

No.	Author(s)	Title	Editor	Publisher	Place	Year	Page
1.	Nanda Rohra, Manish Gore, Sathish Dyawanapelly, Mahesh Tambe, Ankit Gautam, Meghna Suvarna, Ratnesh Jain, and Prajakta Dandekar.	Emerging Trends in Nanotechnology for Diagnosis and Therapy of Lung Cancer in Nano-biotechnology: Human Health and the Environment	Alok Dhawan, Sanjay Singh, Ashutosh Kumarand Rishi Shanker	CRC Press, Taylor and Francis Group	New York, USA	April 2018	105-170
2.	Anurag Dobhal, Prachi Bangde, Anomitra Dey, Prajakta Dandekar and Ratnesh Jain,	Chitosan-Based Nanoparticulate Systems: Implication Towards Therapeutics Application in Particulate Technology for Delivery of Therapeutic	Sougata Jana and Subrata Jana. Ltd	Springer International Publishing AG, Springer Nature	Singapore	Oct. 2017	167-225

3.	Prof. Archana Juvekar and Prof. S.R. Naik	Advances in Biomedical Experimental Techniques in Pharmacological Assays		CBS Publishers and Distributors Pvt. Ltd.	Mumbai	2018	
4.	K.S.Laddha	Quality Standards of Indian Medicinal Plants"A) Artemisia absinthium Linn.	Neeraj Tandon, Parul Sharma	Indian Council of Medical Research	New Delhi	2017	01
5.	K.S.Laddha	Quality Standards of Indian Medicinal Plants" B) Bauhinia racemose Lamk	Neeraj Tandon, Parul Sharma	Indian Council of Medical Research	New Delhi	2017	14
6.	K.S. Laddha	Quality Standards of Indian Medicinal Plants" C) Barberis aristata DC	Neeraj Tandon, Parul Sharma	Indian Council of Medical Research	New Delhi	2017	24
7.	K.S. Laddha	Quality Standards of Indian Medicinal Plants" D) Blepharis edulis (Forssk).	Neeraj Tandon, Parul Sharma	Indian Council of Medical Research	New Delhi	2017	34
8.	K.S. Laddha	Quality Standards of Indian Medicinal Plants" E) Carapichea ipecacuana (Brot).	Neeraj Tandon, Parul Sharma	Indian Council of Medical Research	New Delhi	2017	60
9.	K.S. Laddha	Quality Standards of Indian Medicinal Plants" F)Cordia dichotoma G.Forst (Ripe fruit).	Neeraj Tandon, Parul Sharma	Indian Council of Medical Research	New Delhi	2017	122

10.	K.S. Laddha	Quality Standards of Indian Medicinal Plants" G)Cordia dichotoma G.Forst (Stem bark)	Neeraj Tandon, Parul Sharma	Indian Council of Medical Research	New Delhi	2017	132
11.	K.S. Laddha	Quality Standards of Indian Medicinal Plants" H)Diospyros exsculpta Buch.	Neeraj Tandon, Parul Sharma	Indian Council of Medical Research	New Delhi	2017	158
12.	K.S. Laddha	Quality Standards of Indian Medicinal Plants" H) Diospyros exsculpta malabarica. kostal	Neeraj Tandon, Parul Sharma	Indian Council of Medical Research	New Delhi	2017	167
13.	K.S. Laddha	Quality Standards of Indian Medicinal Plants" I)Flacourtia indica(Burm.f.) Mer	Neeraj Tandon, Parul Sharma	Indian Council of Medical Research	New Delhi	2017	179
14.	K.S. Laddha	Quality Standards of Indian Medicinal Plants" J)Lantana camara Linn	Neeraj Tandon, Parul Sharma	Indian Council of Medical Research	New Delhi	2017	221
15.	K.S. Laddha	Quality Standards of Indian Medicinal Plants" K) punica granatum Linn.	Neeraj Tandon, Parul Sharma	Indian Council of Medical Research	New Delhi	2017	299

16.	K.S. Laddha	Quality Standards of Indian Medicinal Plants" L) Vitis vinifera Linn.	Neeraj Tandon, Parul Sharma	Indian Council of Medical Research	New Delhi	2017	349
17.	V. Patravale, P. Desai, S. Mapara	Lipid Nanocarriers for Advanced Therapeutic Applications	Md. AbulBarkat, Harshita A. B., SarwarBeg, Farhan J. Ahmad	IGI Global	Hershey, Pennsylvania, USA	2018	-
18.	V. Patravale, A. Joshi	An overview of the therapeutic aspect of living drugs probiotics	Anil K. Sharma	IGI Global	Hershey, Pennsylvania, USA	2018	1-34
19.	J. Disouza, K.Patil, P.Kakade, V. Patravale	Dietary Fibers and Nutraceuticals in Prevention of Hypertension	Anil K. Sharma	IGI Global	Hershey, Pennsylvania, USA	2018	192-232
20.	V. Patravale, S. Naik, S. Dhage	Role of Diet, Functional Foods, and Nutraceuticals in Brain Disorders	Anil K. Sharma	IGI Global	Hershey, Pennsylvania, USA	2018	256-287
21.	V. Patravale, N. Kadwadkar, S. Patki, J. Disouza	Nutraceutical and Functional Foods in Treatment of Anemia	Anil K. Sharma	IGI Global	Hershey, Pennsylvania, USA	2018	308-339

PUBLICATION

No.	Authors	Title	Journal	Vol. No.	Pages	Year
1.	Bhusari, A.M., Lakshminarayanan, N., Pawar, Y.P., (...), Rajan, M.G.R., Degani, M.S.	Radiosynthesis and preclinical evaluation of [18F] 4- (2-fluoroethoxy) -2H-chromen-2-one as a novel myocardial perfusion imaging agent.	Radiochimica Acta	-	1-8	2017

2.	Bochare, Machhindra D.; Degani, Mariam S. From ACS	Polyethylene Glycol Nitrite (PEG-ONO) as a Novel Diazotizing Agent	Sustainable Chemistry & Engineering	5	3716-3720	2017
3.	Kande, Kishor V.; Kotak, Darsheen J.; Degani, Mariam S.; Kirsanov, Dmitry; Legin, Andrey; Devarajan, Padma V.	Microwave-Assisted Development of Orally Disintegrating Tablets by Direct Compression	AAPS PharmSciTech	18	2055-2066.	2017
4.	H.Janmanchi, A.Raju, M.S.Degani, M.K.Ray M.G.R.Rajan	Antituberculosis, antibacterial and antioxidant activities of Aegiceras corniculatum, a mangrove plant and effect of various extraction processes on its phytoconstituents and bioactivity	South African Journal of Botany	113	421- 427	2017
5.	Dinesh M Dhumal, KG Akamanchi	Self-microemulsifying drug delivery system for camptothecin using new bicephalous heterolipid with tertiary-amine as branching element	International journal of pharmaceutics	541	48- 55	2018
6.	Ganesh Wagh, Snehalata Autade, Pravin C Patil, Krishnacharya G Akamanchi	o-Iodoxybenzoic acid mediated generation of aryl free radicals: synthesis of stilbenes through C–C cross-coupling with β-nitrostyrenes	New Journal of Chemistry	42	3301-3309	2018
7.	Matthias Hempe, Lutz Schnellbächer, Tobias Wiesner, Michael Reggelin	meta-and para-Functionalized Thermally Crosslinkable OLED-Materials through Selective Transition-Metal-Catalyzed Cross-Coupling Reactions	Synthesis	49	4489-4499	2017

8.	Patil, D. M. and Akamanchi, K.G.	Microwave assisted process intensification and kinetic modelling: Extraction of camptothecin from Notha- podytes nimmoniana plant	Industrial Crops and Products	98	60–67	2017
9.	Patil, D. M. and Akamanchi, K.G.	of influential factors: Extraction of Ultrasound-assisted rapid extraction and kinetic modelling camptothecin from Nothapodytes nimmoniana plant	Ultrasonics Sonochemistry	37	582–591	2017
10.	Ghorpade, A.K. and Akamanchi, K.G.	A mild, convenient and efficient sodium nitrite mediated hydrolysis of α-halo ketones to corresponding α -hydroxy ketones	Chemistry Select	2	2457 – 2461	2017
11.	Kale, S.S. and Akamanchi, K.G.	Rational approach for design and evaluation of anti-aggregation agents for protein stabilization: A case study of trehalose phenylalaninate	International Journal of Pharmaceutics	524	215–225	2017
12.	Patil, P. C. and Akamanchi, K.G.	A new combination of cyclohexylhydrazine and IBX for oxidative generation of cyclohexyl free radical and related synthesis of parvaquone	Tetrahedron Lett.	58	1883–1886	2017
13.	Ganesh D. Wagh, and Akamanchi, K.G.	Sulfated tungstate catalyzed synthesis of C3-symmetric 1,3,5-triarylbenzenes under solvent-free condition	Tetrahedron Lett.	58	3032–3036	2017

14.	KP Sawant, R Fule, M Maniruzzaman, PD Amin	Extended release delivery system of metoprolol succinate using hot-melt extrusion: effect of release modifier on methacrylic acid copolymer.	Drug Delivery and Translational Research	-	1-15	2018
15.	J Pawar, D Suryawanshi, K Moravkar, R Aware, V Shetty	Study the influence of formulation process parameters on solubility and dissolution enhancement of efavirenz solid solutions prepared by hot-melt extrusion: a QbD.	Journal of Pharmaceutical Investigation	47(6)	559- 574	2018
16.	J Pawar, MT Ali, R Fule, K Moravkar, M Seervi, S Sathaye, P Amin	Biodegradable Porous Starch Spheres as a Novel Carrier for Enhancement of Dissolution Rate and Oral Bioavailability of Itraconazole.	Current drug delivery	14 (7)	944- 954	2017
17.	JN Pawar, RA Fule, M Maniruzzaman, PD Amin	Solid crystal suspension of Efavirenz using hot melt extrusion: Exploring the role of crystalline polyols in improving solubility and dissolution rate.	Materials Science and Engineering-C	C78	1023-1034	2017
18.	Santosh Gejage*, Purnima Amin	Development and validation of a stability indicating HPLC assay method for tacrolimus in semi-solid dosage form & bulk drug.	Indo American Journal of Pharmaceutical Research	8(4)	390- 399	2018

19.	CK Khatri, VB Satalkar, GU Chaturbhuj	Sulfated polyborate catalyzed Kabachnik-Fields reaction: An efficient and eco-friendly protocol for synthesis of α-amino phosphonates	Tetrahedron Letters,	58	694- 698	2017
20.	CK Khatri, VB Satalkar, GU Chaturbhuj	Kabachnik–Fields Reaction on a Sulfated Polyborate	Synfacts	13	0438	2017
21.	DS Rekunge, CK Khatri, GU Chaturbhuj	Sulfated polyborate: An efficient and reusable catalyst for one pot synthesis of Hantzsch 1,4-dihydropyridines derivatives using ammonium carbonate under solvent free conditions	Tetrahedron Letters,	58	1240–1244	2017
22.	DS Rekunge, CK Khatri, GU Chaturbhuj	Synthesis of Hantzsch 1,4-Dihydropyridines Catalyzed by Sulfated Polyborate	Synfacts	13	0558	2017
23.	KS Indalkar, CK Khatri, GU Chaturbhuj	Rapid, efficient and eco-friendly procedure for the synthesis of quinoxalines under solvent-free conditions using sulfated polyborate as a recyclable catalyst	Journal of Chemical Sciences	129	141–148	2017
24.	KS Indalkar, CK Khatri, GU Chaturbhuj	Sulfated polyborate: A mild, efficient catalyst for synthesis of N-tert-butyl/N-trityl protected amides via Ritter reaction	Journal of Chemical Sciences	129	415–420	2017

25.	Chetan K.Khatri, Krishna S.Indalkar, Chandragouda R. Patil, Sameer N.Goyal, Ganesh U. Chaturbhuj	Novel 2-phenyl-4,5,6,7-tetrahydro [b] benzothiophene analogues as selective COX-2 inhibitors: Design, synthesis, anti-inflammatory evaluation, and molecular docking studies	Bioorganic & Medicinal Chemistry Letters	27	1721-1726	2017
26.	CK Khatri, MS Patil, GU Chaturbhuj	Sulfated polyborate: mild, efficient and eco-friendly catalyst for the synthesis of 2, 3-dihydroquinazolin-4 (1H)-ones	Journal of the Iranian Chemical society	14	1683-1689	2017
27.	CK Khatri, AS Mali, GU Chaturbhuj	Sulfated polyborate catalyzed Kindler reaction: a rapid, efficient, and green protocol	Monatsheftefür Chemie-Chemical	148	1463-1468	2017
28.	KS Indalkar, CK Khatri, GU Chaturbhuj	Expeditious and efficient synthesis of Strecker's α-aminonitriles catalyzed by sulfated polyborate	Tetrahedron Letters,	58	2144-2148	2017
29.	KS Indalkar, CK Khatri, GU Chaturbhuj	Strecker Reaction with Sulfated Polyborate	Synfacts	13	0889	2017
30.	CK Khatri, SM Potadar, GU Chaturbhuj	A reactant promoted solvent free synthesis of 3, 4-dihydropyrimidin-2 (1H)-thione analogues using ammonium thiocyanate	Tetrahedron Letters,	58	1778-1780	2017
31.	DS Rekunge, CK Khatri, GU Chaturbhuj	Rapid and efficient protocol for Willgerodt–Kindler's thioacetamides catalyzed by sulfated polyborate	Monatsheftefür Chemie-Chemical	Doi;	10.1007/s00706-017-2013-x	2017

32.	MS Patil, AV Palav, CK Khatri, GU Chaturbhuj	Rapid, efficient and solvent-free synthesis of (un) symmetrical xanthenes catalyzed by recyclable sulfated polyborate	Tetrahedron Letters,	58	2859-2864	2017
33.	MS Patil, C Mudaliar, GU Chaturbhuj	Sulfated polyborate catalyzed expeditious and efficient three-component synthesis of 3-methyl-4-(hetero) arylmethylene isoxazole-5 (4H)-ones	Tetrahedron Letters	58	3250-3261	2017
34.	Chetan K Khatri G U Chaturbhuj	Sulfated polyborate catalyzed N-formylation of amines: A rapid, green and efficient protocol	Journal of the Iranian Chemical society	14	2513-2519	2017
35.	DS Rekunge, CK Khatri, GU Chaturbhuj	Sulfated polyborate-catalyzed efficient and expeditious synthesis of (un) symmetrical ureas and benzimidazolones	Tetrahedron Letters	58	4304-4305	2017
36.	Hemchandra K. Chaudhari, Akshata Pahelkar, Balaram S. Takale	Preparative-scale synthesis of amino coumarins through new sequential nitration and reduction protocol,	Tetrahedron Letters	58	4107-4110	2017
37.	Rucha R. Wani and Hemchandra K Chaudhari	Docking and 3D QSAR Studies on Substituted Cyclobutylphenyl Quinoline derivatives as inhibitors of bacterial DNA gyrase,	Current Computer-Aided Drug Design	(Manuscript accepted)		2018
38.	Dawre SS, Pathak S, Sharma S., Devarajan PV.	Enhanced Antimalalarial Activity of A Prolonged Release In Situ Gel of Arteether–Lumefantrine In A Murine Model	European Journal of Pharmaceutics & Biopharmaceutics	123	95- 107	Jan 2018

39.	Dawre SS., Devarajan PV.	In Situ Forming Implant of Arteether Based on transition of SMEDDS into Lyotropic Liquid Crystalline Phase.	Current Nanomedicine	7 (1)		Dec 2017
40.	Bachhav SS, Dighe VD, Kotak D, Devarajan PV.	Rifampicin Lipid-Polymer Hybrid Nanoparticles (LIPOMER) for Enhanced Peyer's Patch Uptake.	International journal of pharmaceutics	532 (1)	612- 622	Dec 2017
41.	Chowdhury AA1, Gawali NB1, Shinde P2, Munshi R3, Juvekar AR4.	Imperatorin ameliorates lipopolysaccharide induced memory deficit by mitigating proinflammatory cytokines, oxidative stress and modulating brain-derived neurotropic factor.	Cytokine	110	78- 86	2018
42.	Pai SA1, Martis EAF2, Joshi SG3, Munshi RP3, Juvekar AR1.	Plumbagin exerts antiobesity effects through inhibition of pancreatic lipase and adipocyte differentiation.	Phytotherapy Research		Apr 19. doi: 10.1002/ ptr.6085. [Epub ahead of print]	2018
43.	Mestry SN1, Gawali NB1, Pai SA1, Gursahani MS1, Dhodi JB1, Munshi R2, Juvekar AR3.	Punica granatum improves renal function in gentamicin-induced nephropathy in rats via attenuation of oxidative stress.	Journal of Ayurveda and Integrative Medicine	9476	30323- 6	2018
44.	Chowdhury AA, Gawali NB, Bulani VD, Kothavade PS, Mestry SN, Deshpande PS, Juvekar AR	In vitro antiglycating effect and in vivo neuroprotective activity of trigonelline in d-galactose induced cognitive impairment	Pharmacological Reports	70	372- 377	2018

45.	Chowdhury AA, Gawali NB, Munshi R, Juvekar AR	Trigonelline insulates against oxidative stress, proinflammatory cytokines and restores BDNF levels in lipopolysaccharide induced cognitive impairment in adult mice	Metabolic Brain Disease	33	681- 691	2018
46.	Patil J, Ghodke S, Jain R*, Dandekar P*.	Extraction of vitamin D from Button mushroom (Agaricusbisporus) using Deep Eutectic Solvent and Ultrasonication	ACS Sustainable Chemistry and Engineering,			2018
47.	Kale RD, Gorade VG, Madye N, Chaudhary B, Bangde PS, Dandekar PP.	Preparation and characterization of biocomposite packaging film from poly(lactic acid) and acylated microcrystalline cellulose using rice bran oil,	International Journal of Biological Macromolecules	118	1090-1102	2018
48.	BangdePS, PrajapatiDS, DandekarPP, KapdiAR	New Water-Soluble N-Heterocyclic Carbene-Palladium Complexes as Promising Anti-Tumor Agents: Investigating DNA and Protein Interactions,	Chemistry Select	3 (21)	5709-5716	2018
49.	Saldanha M, Dandekar P*, Jain R*.	A Regulatory Perspective on Testing of Biological Activity of Complex Biologics,	Trends in Biotechnology,	36	231- 234	2018
50.	DeyAnomitra, Kamat Aditya, NayakSonal, Kesselman Ellina Dandekar P*, Jain R*.	Role of proton balance in formation of self-assembled chitosan nanoparticles,	Colloids and Surfaces B: Biointerfaces	166	127- 134	2018

51.	Pofali P,Shirolikar S, Borde L, Pattani A, Dandekar P*,	Jain R*. Synthesis and antibacterial activity of water-dispersible silver nanoparticles via micellar nanoreactors,	Materials Research Express	5	045004	2018
52.	Waghmare V, Wadke P, Dyawanapelly S, Deshpande A, Jain R*, Dandekar P*.	Starch Based Nanofibrous Scaffolds for Wound Healing Applications, Bioactive Materials	In Press, Corrected Proof			2017
53.	More, M.P., Ganguly, P.R., Pandey, A.P., Dandekar, P.P., Jain, R.D., Patil, P.O., Deshmukh, P.K.	Development of surface engineered mesoporous alumina nanoparticles: Drug release aspects and cytotoxicity assessment	IET Nanobiotechnology	11	661- 668	2017
54.	Yadav V, , Jain R*, Dandekar P	Influence of sodium hydroxide in enhancing the surface plasmon resonance of silver nanoparticles,	Materials Research Express,	4,	085015,	2017
55.	Yadav V, Krishnan RA, Borde L, Shirolikar S, Jain R*, Dandekar P*,	pH tunability and influence of alkali metal basicity on the plasmonic resonance of silver nanoparticles,	Materials Research Express	4,	075021	2017
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57.	Bangde P, Atale S, Dey A, Pandit A,Dandekar P*, Jain R*.	Potential Gene Therapy Towards Treating Neurodegenerative Diseases Employing Polymeric Nanosystems,	Current Gene Therapy,	17,	170-183,	2017

58.	Dobhal A, Kulkarni A*, Dandekar P*, Jain R*.	Microreactor-based continuous process for controlled synthesis of Poly-Methyl-Methacrylate-Methacrylic acid (PMMA) nanoparticles,	Journal of Materials Chemistry B,	5,	3404–3417	2017
59.	Dyawanapelly S, Jagtap D D, Dandekar P, Ghosh G*, Jain R*.	Assessing safety and protein interactions of surface-modified iron oxide nanoparticles for potential use in biomedical areas	Colloids and Surfaces B: Biointerfaces	154	408–420	2017
60.	Poonam Agrawal, KS Laddha	Development of validated high-performance thin layer chromatography for quantification of aristolochic acid in different species of the Aristolochiaceae family	Journal of food and drug analysis	1-5		2016
61.	Shefali Prashant Thakkar, Kirti S. Laddha.	Quality Control: Curb Counterfeiting Of Asphaltum (Shilajit),	International Journal of Creative Research Thoughts (IJCRT)	6 (1)	1098-1103 (2018) (N)	2017
62.	P. Desai, V. Patravale.	Curcumin CocrystalMicellesd Multifunctional Nanocomposites for Management of Neurodegenerative Ailments	Journal of Pharmaceutical Sciences	107	1143-1156	2018
63.	D. Kalariaa, M. Singhal, V. Patravale, V. Merino, Y. Kalia.	Simultaneous controlled iontophoretic delivery of pramipexole and rasagiline in vitro and in vivo: Transdermal polypharmacy to treat Parkinson's disease	European Journal of Pharmaceutics and Biopharmaceutics	127	204- 214	2018

64.	A. Darade, S. Pathak, S. Sharma, V. Patravale.	Atovaquone oral bioavailability enhancement using electrospraying technology	European Journal of Pharmaceutical Sciences	111	195- 204	2018
65.	P. Kharkar, S. Talkar, V. Patravale.	A Rapid and Sensitive Bio Analytical RP-HPLC Method for Detection of Docetaxel: Development and Validation	Indian Journal of Pharmaceutical Education and Research	51 (4S)	S729 - S734	2017
Review Articale						
66.	P. Desai, S. Mapara, V. Patravale.	Crystal Engineering: Upcoming Paradigm for Efficacious Pulmonary Drug Delivery	Current Pharmaceutical Design	24	1- 18	2018
67.	S. Mapara, V. Patravale.	Medical capsule robots: A renaissance for diagnostics, drug delivery and surgical treatment	Journal of Controlled Release	261	337- 351	2017
68.	Priya Ghumatkar; Sachin Patil; Vaibhavi Peshattiwar; Tushara Vijaykumar; Vikas Dighe; Geeta Vanage; Sadhana Sathaye.	The modulatory role of phloretin on Aβ 25–35 inducedsporadic AD in wistar rats	Naunyn - Schmiedeberg's Archives of Pharmacology (Under communication)	-	-	2018
69.	Khambete, Mihir; Murumkar, Prashant; Kumar, Amit; Darreh-Shori, Taher; Yadav, Mange; Khare, Lalit; Peshattiwar, Vaibhavi; Sathaye, Sadhana; Degani, Mariam,	Designing and synthesis of Pyrazoline containing multifunctional anti-Alzheimer's agents,	ACS Medicinal Chemistry Letters. (Under communication)	-	-	2018

70.	Suraj Muke, Vaibhavi Peshattiwar, Aakruti Kaikini, Sneha Bagle, Vikas Dighe, Sadhana Sathaye	Neuroprotective effect of Coumarin nasal formulation: Kindling model assessment of Epilepsy	Frontiers in Pharmacology (Under communication)	-	-	2018
71.	P Ghumatkar, V Peshattiwar, S Patil, S Muke, D Whitfiled, D Howlett, P Francis, S Sathaye.	The effect of phloretin on synaptic proteins and adult hippocampal neurogenesis in Aβ (1-42) injected male wistar rats	Journal of Pharmacy and Pharmacology (In Press)	-	-	2018
72.	Rufi Tambe, Aditi Patil, Pankaj Jain, Jayant Sancheti, Gauresh Somani& Sadhana Sathaye.	Assessment of luteolin isolated from Eclipta alba leaves in animal models of epilepsy	Pharmaceutical Biology	55:1	264- 268	Dec 2017
73.	Paramita Batabyal, Safala Malvankar, Akshata Pahelkar, Sadhana Sathaye	Molecular Docking: Virtual screening of phytoconstituents for Drug Discovery	International Journal of Basic and Applied Biology (IJBAB)	4 (4)	206- 210	2017
74.	Safala Malvankar, Paramita Batabyal, Akshata Pahelkar ,Sadhana Sathaye*.	Xanthine Oxidase : A Versatile Enzyme As A Future Therapeutic Target For Prevention Of Inflammation Mediated Disorders	International Journal Of Biotechnology And Biomedical Sciences	3	71- 77	2017
75.	Aakruti Arun Kaikini, Divya Manohar Kanchan, Urvi Narayan Nerurkar, Sadhana Sathaye.	Targeting Mitochondrial Dysfunction for the Treatment of Diabetic Complications: Pharmacological Interventions through Natural Products	Pharmacogn Rev	11 (22)	128–135	2017

76.	D. Vathalani, V. V. Peshattiwar and S. Sathaye	Anti-Oxidant Potential Of Methanolic Extract Of Trigonella Foenum, Trachyspermum Copticum, Nigella Sativa And Their Combination In 1:1:1 Ratio	International Journal of Pharmaceutical Sciences and Research	8 (4)	1701-1707	2017
77.	R. G. Redkar, V. V. Peshattiwar and S. Sathaye	Neuroprotective Effects Of Ocimum Sanctum, Linn. Extract On Mptp-Induced Oxidative And Nitrosative Stress Markers In Male Mouse Brain	International Journal of Pharmaceutical Sciences and Research	8 (4)	1694-1700	2017
78.	Shrikant M. Ghodse, Balaram Takale, Navnath T. Hatvate, Vikas N. Telvekar	Dual Utility of Heterogeneous Catalyst ZSM-5 for C-C Cleavage Leading to Nitriles, and for the Synthesis of Hydrazides	Chemistry Select	3 (16)	4168-4172	April 2018
79.	Saket Bhagat, Dr. Telvekar	l-Proline: An Efficient Organocatalyst for the Synthesis of 5-Substituted 1H-Tetrazoles via [3+2] Cycloaddition of Nitriles and Sodium Azide	Synlett	29 (07)	874-879	Feb 2018
80.	Saket Bhagat, Shrikant M. Ghodse,Dr. Telvekar	Sodium dichloroiodate promoted C-C bond cleavage: An efficient synthesis of 1,3-Benzazoles via condensation of $${\varvec{o}}$$o-amino/mercaptan/ hydroxyanilines with $${\varvec{\beta }}$$β-diketones	Journal of Chemical Sciences	130 (1)	10	Feb 2018

81.	Navnath T. Hatvate Shrikant M. ,Ghodse , Dr. Vikas N. Telvekar	Metal-free synthesis of 2-aminothiadiazoles via TBHP-Mediated oxidative C-S bond formation	Synthetic Communications	59 (43)	3892-3894	Jan 2018
82.	Saket B. Bhagat, Yogesh B. Sutar, Yogesh ManoharVikas N. Telvekar	Diphosphorus Tetraiodide (P2I4): An Efficient Catalyst for Synthesis of 2-Aryl-1,3-benzazoles via Cyclocondensation of o-Amino/Mercaptan/ Hydroxy Anilines with Aryl Acids	Asian Journal of Chemistry			Jan 2018
83.	Ajit Nagarkar, Vikas N Telvekar	L-Proline Catalyzed Synthesis of various N-substituted urea and unsymmetrical N,N'-disubstituted urea	Letters in Organic Chemistry	15 (11)	926- 930	2018
84.	YB Sutar, VN Telvekar	Chitosan based copolymer-drug conjugate and its protein targeted polyelectrolyte complex nanoparticles to enhance the efficiency and specificity of low potency anticancer agent	Materials Science and Engineering	C 92	393-406	2018
85.	Saket B. Bhagat, Vikas N. Telvekar	NBS mediated protocol for the synthesis of N -bridged fused heterocycles in water	Tetrahedron Letters	58 (37)	3662-3666	Aug 2017
86.	Nikhil C Jadhav, Akshata R Pahelkar, Neha V Desai, Vikas N Telvekar	Design, synthesis and molecular docking study of novel pyrrole-based α-amylase and α-glucosidase inhibitors	Medicinal Chemistry Research	26(10)	2675-2691	Nov. 2017

87.	Ingle, S.G., Pai, R.V., Monpara, J.D., Vavia, P.R.	Liposils: An effective strategy for stabilizing Paclitaxel loaded liposomes by surface coating with silica	European Journal of Pharmaceutical Sciences	122	51- 63	2018
88.	Monpara, J., Kanthou, C., Tozer, G.M., Vavia, P.R.	Rational Design of Cholesterol Derivative for Improved Stability of Paclitaxel Cationic Liposomes	Pharmaceutical Research	35	1- 17	2018
89.	Chobisa, D., Patel, K., Monpara, J., Patel, M., Vavia, P.	Development and characterization of an organic solvent free, proliposomal formulation of Busulfan using quality by design approach	International Journal of Pharmaceutics	535	360- 370	2017

PATENTS : APPLIED/GRANTED

No.	Inventors	Title	Country	Funding agency
PROFESSOR P. D. AMIN				
1	Vishal Kataria, Geeta Umesh Yadav, Kailas Kalicharan Moravkar, Swikruti Sen Amin Purnima Dhanraj.	Oral dispersible film compositions prepared by twin-screw hot melt extrusion technology	India	Jubeln lifesciences pvt. ltd. bangalore
2	Vishal Kataria, Geeta Umesh Yadav, Devanshi Sandeep Shah, Kailas Kalicharan Moravkar, Amin, Purnima Dhanraj,	Topical preparations of carbomer based gel and emulgel using twin-screw hot melt extrusion technology	India	Jubeln lifesciences pvt. ltd. bangalore

PROFESSOR PADMA V. DEVARAJAN				
3.	Devarajan P. V., Das Saugandha, Kotak Darsheen, Lokhande Amit S	**201821012126** Kit for Visual Detection of Calcium in Biological Fluids	India	TEQIP
4.	Devarajan P. V., Lokhande Amit S, Sabu Shweta V., D'souza Keith A.	**201821012134** Kit for Visual Detection of Phosphorous in Biological Fluids	India	TEQIP
DR. PRAJAKTA DANDEKAR JAIN				
5.	Dandekar Jain Prajakta, Jain Ratnesh, Gore Manish Ravikiran,	Microfluidic Device for the development of in-vitro co-cultures of Mammalian Tissues,	International PCT Patent Application, PCT/ IN2017/000071	RUSA
6.	Gore Manish Ravikiran, Dandekar Jain Prajakta, Jain Ratnesh,	Microfluidic device for the development of in-vitro co-cultures of mammalian tissues	Indian Patent Application No.201621000456, 2016.	DST
7.	Gore Manish Ravikiran, Dandekar Jain Prajakta, Jain	Ratnesh,Microfluidic platform for in-vitro co-cultures of mammalian tissues	Indian Design Application No.279195, 2016	RUSA
PROFESSOR V. B. PATRAVALE				
8.	Prof. Vandana B. Patravale	Novel dendrimer and application thereof (201621034246)	India	Self-Applied
9.	Prof. Vandana B. Patravale	Stable atovaquone nanoparticles with increased bioavailability and pharmaceutical composition of the same (201621020162)	India	Self-Applied
10.	Prof. Vandana B. Patravale	Lipidic nanoparticles based composition and method of formulation and use thereof (3329/MUM/2010)	India	Self-Granted
11.	Prof. Vandana B. Patravale	Pharmaceutical composition of curcumin (Indian Patent No. 283059)	India	Self-Granted

PROFESSOR SADHANA SATHAYE				
12.	Sadhana Sathaye, Ganesh Chaturbhuj, Chetan Khatri, Suraj Muke	Development and Evaluation Of Wedelolactone For Antiepileptic Activity By Using Nasal Formulation For Improved Efficacy	India	UGC
13.	Sadhana Sathaye, Suraj Muke	AQUALIBLE: a superefficient product for water nourishment and management	India	UGC

ENOWMENT FELLOWSHIPS AND LECTURES ORGANIZED

Sr. No	Date of Lecture	Fellowship	Distinguished speaker/Affiliation	Title of Lecture
1	27th March, 2018	Professor V. M. Kulkarni Endowment Fund	Professor Utpal S. Tatu	Heat shock protein 90 as a drug target against neglected infectious diseases
2	27th March, 2018	Professor S. K. Pradhan Endowment	Dr. Krishnan Ravikumar Chief Scientist & Head Center for X-ray Crystallography CSIR- Indian Institute of Chemical Technology Hyderabad, Telangana- 500007	Mass spectrometry: A Swiss knife for biotheraprutic protein characterisation

GENERAL PUBLICATIONS

PROF. VADANA B. PATRAVALE

- Pandya, V. Patravale. Surgical Glues: A step towards painless clinical practice.Chronicle Pharmabiz (2018)
- P. Shah, V. Patravale. Microsponges' nature ideal for cosmeceuticals. Ingredients South Asia (ISA) (2018)
- R. Pawar, V. Patravale. Theranostic Nanomedicine: An Upcoming Frontier. PharmaTimes (2018)
- R. Bhuptani, V. Patravale. Marine derived skin lightners: New paradigm. Ingredients of South Asia-CPHI worldwide (2017)
- R. Bhuptani, V. Patravale. Anti-pollution range: New realm in skin care. Ingredients of South Asia-CPHI worldwide (2017)
- P. Kakade, V. Patravale. Biomimetic-Nanocomposite Drug Delivery System. CPHISpecialIssue (2017)
- D. Shah, V. Patravale. Stem Cell Secretomes in Regenerative Medicine. ChroniclePharmabiz-CPHI (2017)

MEMBERSHIP OF IN-HOUSE COMMITTEES

PROFESSOR M. S. DEGANI

- Fellow of Maharashtra Academy of Sciences
- Life member of Indian Pharmaceutical Association.
- Life member of Indian Women Scientists Association (AWSA)
- Member of Third World Organization of Women's Association in Science.
- Life member of APTI.
- Life member UDCT alumni association.
- Member of American Chemical Society

PROFESSOR K. G. AKAMANCHI

- R C member dept of chem.
- Co-ordinator TEQIP R & D committee
- Admission committee for PG Pharma Dept.
- Fellowship enhancement committees
- Research Assistants selection committee.
- Member academic council
- Member, Board of Management ICT
- Member, Senate ICT

PROFESSOR P. D. AMIN

- Unfair meansin exams committee, Examination Committee, Conveyer of Vortex 2018, Industrial visit, community services.

PROFESSOR P. V. DEVARAJAN

- Institute TEQIP Coordinator
- Coordinator of M. Tech Pharmaceutical Biotechnology Course
- Member UGPC
- Member PGPC
- Member Academic Council
- Member Anti-ragging Committee
- Member Library Committee

DR. PRAJAKTA DANDEKAR JAIN

- Member, UDCT Alumni Association
- PROFESSOR K. S. LADDHA
- Dean Infrastructure and Campus Development
- Chairman, Purchase Committee
- Telecom Incharge

PROFESSOR V. B. PATRAVALE

- Editor, Bombay Technologist
- Lab in-charge, Undergraduate Pharmaceutics Laboratory
- Member, Inhouse Committee
- In-charge, B. Tech. Projects, Department of Pharmaceutical Sciences and Technology
- In-Charge, Pharmacy Council of India, Department of Pharmaceutical Sciences and Technology

PROFESSOR S. SATHAYE

- Chair person of Institutional Animal Ethics Committee.
- Member of Safety Committee.
- Student's welfare Committee.
- Member of examination squad.

DR. V. N. TELVEKAR

- Member of Scrap

Committee
- In-Charge of In plant training;
- In-Charge of industrial visit
- In-Charge of Community Service

PROFESSOR P. R. VAVIA
- Dean, Academic Program
- Colloquium in-charge, ICT
- In-plant training co-ordinator, Pharmaceutical Department, ICT
- Member, Institutional animal ethics committee, ICT
- Chairman, Examination committee, ICT
- Member, Equal Opportunity Cell, ICT
- Member, Fee's committee, ICT

ORAL / POSTER PRESENTATIONS:

PROFESSOR M. S. DEGANI
- RESOURCE PERSON at a two week AICTE sponsored Quality Improvement Programme on "Advances in Drug Discovery and Pharmaceutical Sciences: A Research Perspective" from 5th -17th Feb 2018

DR. H. K. CHAUDHARI
- Refresher course in chemical Sciences and Technology, October25-Noveember 14, 2017, at UGC sponsored by University of Mumbai
- Innovations in Basic Sciences, January5, 2018 at Savitri Phule Pune University & MVPS

PROFESSOR P .V. DEVARAJAN
- Amit S. Lokhande*, Padma V. Devarajanpresented a poster titled "Comparative Evaluation of Anti-Tubercular Drug Combination Microparticles for Pulmonary Delivery in BiorelevantDissolution Media", at DISSO-INDIA HYDERABAD 2018 International Annual Symposium organized by Society for Pharmaceutical Dissolution Science (SPDS) in association with SOTAX AG, on 28th & 29th June 2018, at Hotel Avasa, Madhapur, Hyderabad, India.
- Rijo John*, Padma V. Devarajanpresented a poster titled, "Discriminating Dissolution Rates of Intranasal Curcumin Microemulsion and Curcumin Solution Using USP I and USP IV Apparatus", at DISSO-INDIA HYDERABAD 2018 International Annual Symposium organized by Society for Pharmaceutical Dissolution Science (SPDS) in association with SOTAX AG, on 28th & 29th June 2018, at Hotel Avasa, Madhapur, Hyderabad, India.
- Shweta Chawla*, AjitGorakshkar, Manisha mandkaikar, Kinjaksha Ghosh, Padma V. Devarajanpresented a poster titled "Silver Nanoparticles enabled Instantaneous Cost effective and Multiplexed Rare Blood Groups Identification System", at South Asian College an Affiliate of American College of Clinical Pharmacology (SAC-ACCP) 11th Annual International Conference on "Clinical Pharmacology for healthy ageing" on 1st & 2nd May 2018, held at Nehru Centre, Worli, Mumbai, India.
- Darsheen J Kotak*, Padma V. Devarajanfor a poster titled "Sublingual Film of Salmon Calcitonin Loaded Hydroxyapatite Nanoparticles as Non Invasive Approach for the Treatment of Osteoporosis", at South Asian College an Affiliate of American College of Clinical Pharmacology (SAC-ACCP) 11th Annual International Conference on "Clinical Pharmacology for healthy ageing" on 1st & 2nd May 2018, held at Nehru Centre, Worli, Mumbai, India.
- Heena V. Maithania*, BhabaniMohanty, PradipChaudhari, Abdul Samad, Padma V. Devarajan, presented a poster titled, "SplenotropicBuparvaquone Solid Lipid Nanoparticles for Theileriosis: A Spleen Resident Infection", in NANOBIOTECK-2017, 2nd Annual Conference of Indian Society of Nanomedicine (ISNM), organized in association with IISER Trivandrum, DBT, DST, & AIIMS, India, on 6th to 8th December 2017, at Convention Centre, KTDC-Samudra, Trivandrum, Kerala, India.

- Priyanka Jahagirdar*, Pramodkumar Gupta, Savita Kulkarni and Padma V. Devarajan, presented a poster titled, "Modulation of Host Cell Apoptosis by Nanocurcumin: A Promising Approach in Tuberculosis Therapy", in NANOBIOTECK-2017, 2nd Annual Conference of Indian Society of Nanomedicine (ISNM), organized in association with IISER Trivandrum, DBT, DST, & AIIMS, India, on 6th to 8th December 2017, at Convention Centre, KTDC-Samudra, Trivandrum, Kerala, India.
- PinalkumariChaudhari, HiralVegad*, Padma V. Devarajan, presented a poster titled, "Targeted Mucoadhesive in situ lipomer for coccidiosis", in NANOBIOTECK-2017, 2nd Annual Conference of Indian Society of Nanomedicine (ISNM), organized in association with IISER Trivandrum, DBT, DST, & AIIMS, India, on 6th to 8th December 2017, at Convention Centre, KTDC-Samudra, Trivandrum, Kerala, India.
- Suraj K. More, Manisha M. Sannake*, and Padma V. Devarajan, presented a poster titled, "Docosahexanoic acid mediated Targeted Brain Delivery of Oral Curcumin Microemulsion", in NANOBIOTECK-2017, 2nd Annual Conference of Indian Society of Nanomedicine (ISNM), organized in association with IISER Trivandrum, DBT, DST, & AIIMS, India, on 6th to 8th December 2017, at Convention Centre, KTDC-Samudra, Trivandrum, Kerala, India.
- Sagar S. Bachhav, Amit S. Lokhande*, VikasDighe, Padma V. Devarajan, presented a poster titled, "Orally Administered Hydrophobic Rifampicin Nanoparticles Demonstrated Reduction in Drug Induced Hepatotoxicity", in NANOBIOTECK-2017, 2nd Annual Conference of Indian Society of Nanomedicine (ISNM), organized in association with IISER Trivandrum, DBT, DST, & AIIMS, India, on 6th to 8th December 2017, at Convention Centre, KTDC-Samudra, Trivandrum, Kerala, India.
- Saugandha Das*, Mariam Degani& Padma V. Devarajan, presented a poster titled, "In Silico Prediction-A Tool for Maximizing Monomeric Amphotericin B in Solid Lipid Nanoparticles", in AAPS Annual Meeting and Exposition 2017, San Diego, California, USA, on 12th to 15th November 2017.
- Amit S. Lokhande*, Padma V. Devarajan, presented a poster titled, "Single Step Co-Encapsulation of Microparticles with Three Anti-Tubercular Drug Combination by QbD Approach", in NanoSciTech-2017 Chandigarh, Expanding Horizons of Nanotechnology, Next Gen Challenges in Biomedical Sciences, organized by Punjab University in association with UGC-India, on 8th to 10th November 2017, at Punjab University Campus, Chandigarh, India.
- ShibaniSupe, SukhadaShevade*, Padma V. Devarajan, presented a poster titled, "QbD driven systematic development of Salinomycin Sodium loaded solid lipid microparticles for coccidiosis", in NanoSciTech-2017 Chandigarh, Expanding Horizons of Nanotechnology, Next Gen Challenges in Biomedical Sciences, organized by Punjab University in association with UGC-India, on 8th to 10th November 2017, at Punjab University Campus, Chandigarh, India.
- Amit S. Lokhande*, Arundhati Lele, Mariam S. Degani, Padma V. Devarajanpresented a poster titled "Demonstrating Insulin Dissociation for Enhanced Sublingual Permeation from Microemulsion", at World Congress on Pharmaceutical Sciences (WCPS) 2017, organized by Conference Era, media partner HTO CLUB, on 5th to 7th October 2017, at Palmarinha Resort & Suites, Goa, India.

DR. PRAJAKTA DANDEKAR JAIN

- Prachi Bangde, Ratnesh Jain and Prajakta Dandekar Jain (2016), Exploring

enzymatic catalyst for modifying chitosan using Deep Eutectic Solvents (DESs), Oral Presentation at CATSHOL-2016, Institute of Chemical Technology (ICT), Mumbai, India, February 2016

- R Akhil Krishnan, Pranjal Deshmukh, Siddharth Agarwal, DeepaDhoble, PoorviPurohit, Prashant Waske, Dileep Khandekar, Prajakta Dandekar, Ratnesh Jain, (2016), Interaction of Chitosan with a Carbon based solid acid, Oral Presentation at CATSCHOL 2016 : One day workshop on Catalysis, Institute of Chemical Technology (ICT), Mumbai, India, February 2016.
- Prasad Pofali, PankajGarg, Shambhavi Pandey, Jong HoonChung, Prajakta Dandekar, Rohidas Arote, Ratnesh Jain (2016), Biodegradable Polyglycerol Sebacate (PGS)-Polyethylenimine (PEI) Polymer for Gene Delivery, Poster Presentation at 15th Controlled Release Society-Indian Chapter Symposium 2016, Institute of Chemical Technology (ICT), Mumbai, India, February 2016
- Tejal Pant, Ratnesh Jain and Prajakta Dandekar (2016), In vitro 3D model of lung for pre-clinical testing of drugs and their delivery systems, Poster Presentation at 15th International Symposium of the Controlled Release Society-Indian Chapter, Institute of Chemical Technology (ICT), Mumbai, India, February 2016
- UdayKoli, Ratnesh Jain, Prajakta Dandekar (2016), Active Targeting of Lung Cancer Cells with Chitosan Oligosaccharide siRNA Nanoplexes, Poster Presentation at 15th International Symposium of the Controlled Release Society-Indian Chapter, Institute of Chemical Technology (ICT), Mumbai, India, February 2016
- R Akhil Krishnan, SiddhantPrabhu, Jay Sheth, Ratnesh Jain and Prajakta Dandekar (2016), Synthesis and Antifungal studies of Chitosan Oligosaccharide-Zinc oxide nano composites, Poster Presentation at 15th International Symposium of the Controlled Release Society-Indian Chapter (CRS-IC) 2016, Institute of Chemical Technology (ICT), Mumbai, India, February 2016.
- PallaviWadke, Vijaya Waghmare, Ratnesh Jain and Prajakta Dandekar (2016), Electrospun starch based nanofibrous mat for wound healing, Poster Presentation at 15th International Symposium of the Controlled Release Society-Indian Chapter (CRS-IC) 2016, Institute of Chemical Technology (ICT), Mumbai, India, February 2016.
- PrachiBangde, Ratnesh Jain and Prajakta Dandekar (2016), Green Approach for Synthesis of Trimethyl Chitosan, a Polymer of Importance in Biomedical Applications, Poster Presentation at 15th International Symposium of the Controlled Release Society-Indian Chapter (CRS-IC) 2016, Institute of Chemical Technology (ICT), Mumbai, India, February 2016.
- SaurabhPatil, Mahesh More, Prajakta Dandekar, Aditya Pattani, Ratnesh Jain (2016), Performance Evaluation Study for Chitosan Oligosaccharide as a Pharmaceutical Excipient, Poster Presentation at 15th International Symposium of the Controlled Release Society-Indian Chapter (CRS-IC) 2016, Institute of Chemical Technology (ICT), Mumbai, India, February 2016.
- Rohan Chhabra, Aparna Deshpande, Ratnesh Jain and Prajakta Dandekar (2016), Starch/Gelatin Based Scaffolds for skin tissue engineering, Oral Presentation at 15th International Symposium of the Controlled Release Society-Indian Chapter (CRS-IC) 2016, Institute of Chemical Technology (ICT), Mumbai, India, February 2016.
- AnuragDhobal, Aanshu Deokuliar, Amol Kulkarni, Prajakta Dandekar and Ratnesh Jain (2016), Continuous platform for the controlled synthesis of polymeric nanoparticles, Poster Presentation at 15th International Symposium

of the Controlled Release Society-Indian Chapter (CRS-IC) 2016, Institute of Chemical Technology (ICT), Mumbai, India, February 2016.

- Sathish Dyawanapelly, Goutam Ghosh, Prajakta Dandekar and Ratnesh Jain (2016), Effect of pH on protein-nanoparticle electrostatic interaction, Poster Presentation at 15th International Symposium of the Controlled Release Society-Indian Chapter (CRS-IC) 2016, Institute of Chemical Technology (ICT), Mumbai, India, February 2016.
- PrachiBangde, Prajakta Dandekar Jain and Ratnesh Jain (2016), Green approaches for synthesis of Trimethyl chitosan using Deep Eutectic Solvent (DESs), Poster Presentation at 15th International Symposium of the Controlled Release Society-Indian Chapter (CRS-IC) 2016 (Advances in Technology and Business Potential of New Drug Delivery Systems), Institute of Chemical Technology (ICT), Mumbai, India, February 2016.
- PrachiBangde, Prajakta Dandekar Jain and Ratnesh Jain (2015), Green approaches for synthesis of Trimethyl chitosan using Deep eutectic Solvent (DESs), Poster Presentation at 4th Industrial Green Chemistry World International Convention & Ecosystem, Mumbai, India, December, 2015
- Tejal Pant, Ratnesh Jain and Prajakta Dandekar (2015), Nanofibrillar cellulose as three-dimensional support for lung culture, Poster Presentation at Seminar on Futuristic Approach to Alternatives, Indian Institute of Technology- Bombay (IIT-B), Mumbai, India, November 2015
- Rohan Chhabra, Manish Gore, Aparna Deshpande, Ratnesh Jain and Prajakta Dandekar (2015), Starch-based scaffolds for potential application in skin tissue engineering, Poster Presentation at Seminar on Futuristic Approach to Alternatives, Indian Institute of Technology- Bombay (IIT-B), Mumbai, India, November 2015
- UdayKoli, Sathish Dyawanapelly, Ratnesh Jain, Prajakta Dandekar (2015), Targeting chitosan oligosaccharide nanoplexes to lung cancer cells for enhanced internalization and improved siRNA delivery, Poster Presentation at Society of Biological Chemists India Mumbai Chapter 2015, National Institute for Research in Reproductive Health, Mumbai, India, August 2015
- Rohan Chhabra, Siddharth Shanbhag, Payal Ganguly, M Dhanasekaran, Abhijit Bopardikar, Rohit Kulkarni, Andreas Stavropoulos, Ratnesh Jain, Prajakta Dandekar (2015), In vitro behaviour of human mesenchymal and gingival stem cells on calcium phosphosilicate based scaffolds for potential application in peridontal defects, Poster Presentation at Society of Biological Chemists India Mumbai Chapter 2015, National Institute for Research in Reproductive Health, Mumbai, India, August 2015
- UdayKoli, Sathish Dyawanapelly, Ratnesh Jain, Prajakta Dandekar (2015), Targeting chitosan oligosaccharide nanoplexes to lung cancer cells for enhanced internalization and improved siRNA delivery, Poster Presentation at 42nd Controlled Release Society Annual Meeting and Exposition 2015, Edinburgh, Scotland, July 2015.
- R Akhil Krishnan, Sathish Dyawanapelly, Prajakta Dandekar, Ratnesh Jain, (2015), Self-assembled nanoconjugate of Amphotericin B and Water Soluble Chitosan, Poster presentation at the 42nd Annual Meeting and Exposition of the Controlled Release Society, Edinburgh, Scotland, July 2015.

PROFESSOR VADANA B. PATRAVALE

- Funding agencies and research grant opportunities, Endowment chair activity, at Ramanbhai Patel College of Pharamcy, Charotar University of Science and technology, Anand, Gujrat,

India 2018

- Exploring the potential of indigenous excipients, Endowment chair activity, at Ramanbhai Patel College of Pharamcy, Charotar University of Science and technology, Anand, Gujrat, India 2018
- Nanodiagnostics, Endowment chair activity, at Ramanbhai Patel College of Pharamcy, Charotar University of Science and technology, Anand, Gujrat, India 2018
- Basics of QbD, Endowment chair activity, at Ramanbhai Patel College of Pharamcy, Charotar University of Science and technology, Anand, Gujrat, India 2018
- Brain targeted nanotherapeutics:anenticing journey from ideation to product realization, 2nd Global Conference on Pharmaceutics and Drug Delivery Systems, Rome, Italy 2018
- Bioinspired nanostructures for unmet needs, One day International seminar on 'Advances in Nanotechnology', Gahlot Institute of Pharmacy, Navi Mumbai, India 2018
- Bioinspired nanostructures: Exploring translational potential, ICMR sponsored nationalseminar on Nanoparticulate drug delivery systems: from bench to bedside, Maliba college of pharmacy, Bardoli, India 2017
- Recent Trends in Cosmeceuticals/ Medical Grade Skin-care Cosmetics, SCODET ASIA 2017,Mumbai, India 2017
- Self-assesmblingfuctional excipients: A Trojan horse approach, International Summit on Nanotechnology, Pharma and Nursing, Dubai, UAE 2017

Conference/symposia presentations

- Radiolabeled drug/ligand loaded Micelles: Exploring diagnostic and therapeutic potentials for glioma through the intranasal route; at global conference on pharmaceutics and drug delivery systems; Rome, Italy, June 2018
- Peptide Metallodendrimers: A Novel Realm in Wound Healing Therapeutics; Pandya A.; at international conference on novel formulation strategies organized by SELECTBIO; Mumbai, India, April 2018
- Nanoengineeredefavirenz loaded vaginal microbicide for prophylaxix of HIV/ AIDS; Khare P., Menon A., Mirani A. Velhal S., Patel V., Patravale V.; at 16th International Symposium on Advances in Technology and Business Potential of New Drug Delivery Systems organized by Controlled Release Society – Indian Chapter, Mumbai, India, February 2018
- Nanomicrobicide gel: A novel platform technology prophylaxis of HIV-1 infection; Mirani A. Velhal S., Patel V.,Bandivdekar A., Patravale V.; at 16th International Symposium on Advances in Technology and Business Potential of New Drug Delivery Systems organized by Controlled Release Society – Indian Chapter, Mumbai, India, February 2018
- Nanophytomedicine for sickle cell anaemia: Biophysical characterization; Kadwadkar N., Pawar R., Mathur D., Patravale V.;at 16th International Symposium on Advances in Technology and Business Potential of New Drug Delivery Systems organized by Controlled Release Society – Indian Chapter, Mumbai, India, February 2018
- Nanoengineered aqueous polymeric dispersion for sustained release applications; ; Chatterjee A., Gite S., Patravale V.; at 16th International Symposium on Advances in Technology and Business Potential of New Drug Delivery Systems organized by Controlled Release Society – Indian Chapter, Mumbai, India, February 2018
- Molecular modeling and novel drug delivery approach for the effective implication of natokinase in Alzheimer's disease; Naik S., Patravale V.; at 16th International Symposium on Advances in Technology and Business Potential of New Drug Delivery Systems organized by Controlled Release Society – Indian

Chapter, Mumbai, India, February 2018

- A novel lipid based brain targeted micellar delivery of rivastigmine; Dogra A., Kharkar P., Desai P., Patravale V.; at 16th International Symposium on Advances in Technology and Business Potential of New Drug Delivery Systems organized by Controlled Release Society – Indian Chapter, Mumbai, India, February 2018
- Nanochemoprevention for Prostate Cancer: A Combinatorial Approach; Talkar S., Kharkar P., International Summit on Nanotechnology, Pharma and Nursing, Dubai, UAE, December 2017
- DoE Based Development of Liposomal Formulation for Pulmonary Hypertension; Dhoble S., Patravale V.; at International Summit on Nanotechnology, Pharma and Nursing, Dubai, UAE, December 2017
- Nanolipidic Drug Delivery System for Sickle Cell Anemia; Kadwadkar N., Pawar R., Patravale V.; at International Summit on Nanotechnology, Pharma and Nursing, Dubai, UAE, December 2017
- Taxane Loaded Novel Lipidic Nanocarriers as Breast Cancer Therapeutics; Kharkar P., Talkar S., Patravale V.; at International Summit on Nanotechnology, Pharma and Nursing, Dubai, UAE, December 2017
- NanoMicide Gel for Prevention of Sexually Transmitted HIV-1 Infection; Mirani A., Pandya A., Shilpa V., Patel V., Bandivdekar A., Patravale V.; at International Summit on Nanotechnology, Pharma and Nursing, Dubai, UAE, December 2017
- Comparison of 'Top-down' Methods for Nanocrystal Engineering , A Case Study; Chogale M., Gite S., Patravale V.; at International Summit on Nanotechnology, Pharma and Nursing, Dubai, UAE, December 2017
- Artemether-Clindamycin Phosphate Nanostructured Lipid Carriers: A Novel Strategy for Treatment of Malaria in Pregnancy; Soumya M., Upadhaya P., Sharma S., Patravale V.; at International Summit on Nanotechnology, Pharma and Nursing, Dubai, UAE, December 2017
- Liposomal formulation for Cystic fibrosis infection: A DoE Approach; Ghodake V., Patravale V.; at International Summit on Nanotechnology, Pharma and Nursing, Dubai, UAE, December 2017
- In-vitro – In-vivo Co-Relation of Atorvastatin Calcium Nanoparticles Using Smart Polymer; Gite S., Patravale V.; at International Summit on Nanotechnology, Pharma and Nursing, Dubai, UAE, December 2017
- Nanoparticle Engineering of Aprepitant using Nano-By-Design (NbD) Approach; Kakade P., Gite S., Mirani A., Patravale V.; at International Summit on Nanotechnology, Pharma and Nursing, Dubai, UAE, December 2017
- Starch Nanosponge for Improved Topical Delivery; Bhuptani R., Dhage S., Patravale V.; at Nanobioteck, Kerala, India, December 2017
- Polyphenol Loaded RecMicide: A Novel Strategy for Prevention of Anal Intercourse Associated HIV-1 Transmission; Mirani A., Kundaikar H., Velhal S., Patel V., Bandivdekar A., Degani M., Patravale V.; at Nanobioteck, Kerala, India, December 2017
- NanoLipoMicide: A Novel Platform Technology for Prophylaxis of HIV-1 Infection;Menon A., Mirani A., Shilpa V., Patel V., Bandivdekar A., Patravale V.; at Nanobioteck, Kerala, India, December 2017
- Exploring Natokinase for Effective Treatment of Alzheimer's Disease; Naik S., Patravale V.; at Nanobioteck, Kerala, India, December 2017
- Fabrication of Polymeric Nanoparticles for use as Tablet Coatings; Chatterjee A., Gite S., Patravale V.; at Nanobioteck, Kerala, India, December 2017
- Nanoparticles coated stents: A novel paradigm in coronary intervention; Agarwal A., Raval A., Patravale V.; at NanoSciTech 2017, Chandigarh, November 2017

- Formulation of Posaconazole Loaded Novel Nano Gel for Vaginal Candidiasis; Sodha S., Kakade P., Mirani A.,Patravale V.; at NanoSciTech2017, Chandigarh, November 2017
- NanoSpermviricide: A Multipurpose Prevention for Unintended Pregnancy and Unprotected Sexual Intercourse Associated HIV; Mirani A., Velhal S., Bandivdekar A., Patel V., Patravale V.; at NanoSciTech2017, Chandigarh, November 2017

PROFESSOR S. SATHAYE

- Aakruti Kaikini "Thymol protects diabetic kidney by attenuating hyperglycemia induced oxidative stress", on 4th-8th December 2017,International Diabetes Federation at Abu Dhabi, UAE
- Paramita Batabyal "Molecular Docking : A virtual screening of Phytoconstituents for drug discovery" on 11th August 2017 at MET College of Pharmacy, Mumbai
- Safala Malvankar,"Xanthine Oxidase: A versatile enzyme as a future therapeutic target for prevention of inflammation maediated disorders" on 16th September 2017 at JNU, Delhi
- Paramita Batabyal, "Molecular Docking : A virtual screening of Phytoconstituents for drug discovery on 16th September 2017 at JNU, Delhi
- Vishu Jain "Evaluation of Thymoquinone in Streptozotocin induced diabetic complications" on 69th IPC, December 2017 at Chandigarh
- Shubham Mulange "Evaluation of neuroprotective activity of Metformin in SHSY5Y Human neuroblastoma cell line" Presented at - 9th National IPA Students Congress 2017
- Vishu Jain "Immunomodulatory role of Thymoquinone in an In-vitro model of Tuberclosis",9th National IPA Students Congress 2017, Rajahmundry

PROFESSOR P. R. VAVIA

Oral presentation:

A. International

1. Yadav Nisha, Vavia Pradeep, "Design and Synthesis of Lipid Derivative of Glucosamine for its application in targeting of exigent blood brain barrier" 3rd International conference of Advances in Functional Materials, University of California, Los Angeles, USA, August 2017.

Poster presentation:

A. International:

1. Sita VG, Vavia Pradeep, "Modelling and optimization of nano emulsion loaded transdermal gel for the treatment of Parkinson's disease by Full Factorial Design", 11th World meeting on pharmaceutics, biopharmaceutical and pharmaceutical Technology organized at Granada, Spain, March 2018.

B. National:

1. Bora Chaitali, Vavia Pradeep, "Formulation and Evaluation of Microemulsion based emulgel of Griseofulvin", 69th Indian pharmaceutical Congress, Chandigarh, December 2017.
1. Indurkar Gajanan, Vavia Pradeep, "Formulation and Evaluation of Microemulsion based nasal spray of Anti-psychotic agent ", 69th Indian pharmaceutical Congress, Chandigarh, December 2017.

INVITED LECTURES:

PROFESSOR M. S. DEGANI

- Speaker at the India Bio-Pharma Landscape Conference "Collaborate to Innovate - Connecting end-to-end drug manufacturing with technology and innovation" 25th April 2018 Bombay Exhibition Center, Mumbai on Developing the next generation of Bio-pharma leaders – Making India the hot bed of innovation and scientific research
- Speaker at the National Workshop on Rational drug design: Fundamentals, Pitfalls an way ahead at BNCP, May 18-19

PROF. P. D. AMIN

- Guest Lecture at Faculty Development Program

sponsored by UGC. Jan 08 2018. At NMIMS University Mumbai

PROFESSOR V. B. PATRAVALE

- Smart lipid nanocarriers: Potential for intracellular targeting, Global Conference on Pharmaceutics andDrug Delivery Systems, Valencia, Spain 2017
- Functionalized lipid based novel nanopharmaceuticals for neurodegenerative disorders, Three days national conference on Neurodegenerative diseases: Stratergies of drug discovery and delivery to the brain, July 2017
- Smart lipid nanocarriers: Potential for intracellular targeting, Two days conference on Novel Parenteral Drug Development, July 2017
- Lipidic nanomimics for malaria prevention and therapy, International conference on "Trends and Innovations in Chemical and Pharmaceutical Technologies", Anna University, Bharathidasan Institute of Technology Campus, Tiruchirappalli, Tamil Nadu, February 2017
- Fundamentals of Topical Dermatological Drug Delivery, Controlled Release Society Indian Chapter, SciTech Centre, Mumbai, January 2017
- Manuscript Writing, Seminar on Skill Development on Research Rubrics & Outcomes, organized by SPP SPTM SVKM's NMIMS, Mumbai, November 2016

PROFESSOR K. S. LADDHA

- Short term training program on emerging trends in Pharmaceutical research: approaches and training at Parul university Wadodara Gujarat on 31 March, 2018
- National Conference on " Startup Enterprenourship opportunities in modern analytical and standerdisation techniques" held at Sardar Patel College of Pharmacy. Vidyanager Vadtal Road Bakrol Anand Gujrat 388315 on 23rd March, 2018
- Challeges in pharmaceutical product development organized by Sighgagd Technical Educaton Society, Smt. Kashibai Nawale College of Pharmacy, Kondawa (Bk) Pune-48, on 10th February, 2018.
- Continuaing Medical Education (CME) for Ayush Teachers Organized by Dept. of Rasashatra and Bhaishajya Kalpana Dr. G. D. Pol Foundation Y. M. T. Ayurvedic Medical College and Hospital Kharghar, Navi Mumabi held at 18th January, 2018.
- Recent trends in spectroscopic and analytical Techniques held at progressive education society Modern College of Pharmacy moshi pune at 11th February, 2018.
- Industrial perspective of natural product formulation at MET Bhujbal Knowlwg City Adgaon Nasik on 13th January, 2018.

PROFESSOR S. SATHAYE

- Delivered a presentation at the National Seminar organized by Directorate of Ayush, Maharashtra state on "Diabetes Mellitus- From Laboratory to Practice" at D Y Patil, Navi Mumbai on 17th August 2017.
- Delivered a talk on "Preclinical and Pharmacological studies in drug research: Challenges and Perspective" at Bhanuben Nanavati College of Pharmacy, Mumbai on 4th December 2017.
- Delivered a talk entitled "Neuroprotection as an effective strategy in the therapeutics of Neurodegenerative disorders" at International Conference on Toxicology and Clinical Pharmacology during December 14-16, 2017 at Rome, Italy.
- Delivered a lecture on "Aahar, Vihara ani Aarrogya" on 16th February 2018 at Vanita Samaj, Dadar, Mumbai
- Delivered a lecture entitled "Research Methodology for Evidence Based Homeopathy" for Horizon 15th Annual homeopathic P.G. workshop 2018 on Research in Homeopathy: Exploring New Horizon held at Y.M.T Homeopathic Medical College on 08th February 2018.

EVENTS OF ORGANIZED

Conference/ Symposia /Workshop	Title	Duration
Workshop	Analytical Techniques- Mettler Toledo	22 March,2018
Workshop	Advance Materials in Personal Care Industry- GenerexPharmasistPvt Ltd	Feb 2018
Event	Celebration of the Diamond Jubilee year (75 years of the inception of Pharmacy	7th April, 2018
WORKSHOP	GATTEFOSEE: Oral delivery of Proteins and Peptides using Lipid Excipients	15th December, 2017
Seminar	Nano Tracking Analysi	18th April, 2018
Seminar	Milling in Pharmaceutical Oral Solid Manufacturing & Dry Granulation Technique in Pharma OSD	27th March, 2018
Seminar	Regulatory roadmap for domestic and international market	2nd December, 2017
Seminar	Discovering the fundamental relationships between particle size, shape, charge and rheology for suspension stability	7th October, 2017
Workshop	Two workshop conducted on "Extraction and isolation of phytoconstituents"	22nd & 23rd July, 2017
Workshop	One Workshop conducted on Herbal microscopy	2017

INDUSTRIAL CONSULTANCY

Faculty	Name of Company	Area of Advice	Period
Prof M. S. Degani	Punjab Chemicals and Crop Protection Ltd.	Drugs Intermediates	2016- Ongoing
	Ambernath Organics Pvt. Ltd. CSR grant	Drugs Intermediates	2017- Ongoing
Professor K. G. Akamanchi	Sahajananad Technologies Pvt. Ltd.	Pharmaceuticals	Ongoing
Professor P. D. Amin	Evonik	Excipients	6 months
	Merck	Nutracuticals	12 months
	BASF	Excipients	6 months
	Lifescent INC USA	Inserts	12 months
	Cheryl Laboratories Pvt Ltd	Topical formulations	6 months
	Salicylates & Chemicals Pvt Ltd	Excipeints	6 months
	JublenLifesciences Bangalore	HME	12 months
	Bajaj Helathcare Ltd	Solid dosage forms	12 months

Professor P. V. Devarajan	Zim Laboratories	Pharmaceuticals and drug delivery systems	2014- present
	Emcure Pharmaceuticals Pvt Ltd	Pharmaceuticals and drug delivery systems	2013- present
Professor K. S. Laddha	Total Herb solutions	-	Ongoing
	Ms sheekkhar starch pvt.ltd.	-	Ongoing
Professor V. B. Patravale	Sahajananad Technologies Pvt. Ltd.	Pharmaceuticals	2001-ongoing
	CadilaPharma Ltd.	Pharmaceuticals	2003-ongoing
	Mankind	Pharmaceuticals	2016-2017
Professor P. R. Vavia	Nippon Synthetic Chemicals Ltd. Japan	-	January 2018

DETAILS OF POST-GRADUATE/ PH. D. STUDENTS WHO PASSED OUT

Name	Course	Title
PROFESSOR M. S. DEGANI		
Dr. Kundaikar Harish	Ph. D. (Tech) Pharmaceutical Chemistry	Design and synthesis of molecules for Alzheimer's disease
Dr. Bhusari M. Arun	Ph. D. (Tech) Pharmaceutical Chemistry	Design, synthesis and evaluation of fluorine containing ligands for Alzheimers disease
PROFESSOR K. G. AKAMANCHI		
Dr. Dinesh M. Dhumal	Ph. D. (Tech) Pharmaceutical Chemistry	Design and Synthesis of Heterolipids for Pharmaceutical Application
Dr. Dhiraj M. Patil	Ph. D. (Tech.) Pharmaceutical Technology	High pressure assisted extraction of phytoconstitutent
PROFESSOR P. D. AMIN		
Dr. Geeta U. Yadav	PhD (Tech) Pharmaceutics	Developing Innovative Delivery System for Nutraceuticals (Polyphenols & Omega acids)
Dr. Jaywant N. Pawar	PhD (Tech) Pharmaceutics	Approaches for dissolution enhancement of poorly water soluble drugs
Dr. G. U. Chaturbhuj		
Dr. Chetan K. Khatri	Ph. D. (Tech.) Chemistry	Design, synthesis and evaluation of NCE's and process chemistry of drug intermediate(s).
Dr. Krishna S. Indalkar	Ph. D. (Tech.) Chemistry	Process Intensification of Pharmaceutical Substances Through new process Chemistry
PROFESSOR P. V. DEVARAJAN		
Dr. Sagar Bachhav	PhD (Tech) Pharmaceutics	Development and preclinical evaluation of Drug Delivery systems for Targeted Delivery
Dr. Shilpa Dawre	PhD (Tech) Pharmaceutics	Controlled release in situ parenteral depot formulations
Dr. Suraj More	PhD (Tech.) Pharmaceutics	Brain Targeted Drug Delivery Systems

PROF. A. R. JUVEKAR		
Dr. Nitin B. Gawali	PhD (Tech.) Pharmacology	Neuropharmacological effect Agmatine, a neuropeptide, on anxiety and related disorders.
PROFESSOR K. S. LADDHA		
Dr. Snehal Bhandare	Ph.D(Tech) Pharmacognosy	Flavonoids: their Extraction, Isolation and chemistry
Dr. Shrikant Babar	Ph.D(Tech) Pharmacognosy	Chemical modification of triterpenoids
Dr.Mandar Mulik	Ph.D(Tech) Pharmacognosy	Natural Lignans: their Extraction, Isolation and chemistry
PROFESSOR SADHANA SATHAYE		
Dr. Priya Jayprakash Ghumatkar	Ph.D(Tech.) Pharmacology	Screening of new therapeutic entities in Alzheimer's disease
Dr. Devang Dhimant Sarvaiya	Ph.D(Tech.) Pharmacology	Pharmacokinetic and Pharmacodynamic Evaluation of Therapeutic Moieties as an Adjunct Immunotherapy in Tuberculosis
DR. V. N. TELVEKAR		
Dr. Shrikant M. Ghodse	Ph.D(Tech.) Pharmaceutical Chemistry	Development of New Methodologies for APIs Intermediates from Ketones.
Dr. Saket B. Bhagat	Ph.D(Tech.) Pharmaceutical Chemistry	Design and Synthesis of Novel Anti-infective Agents
Dr. Devidas Mali	Ph.D(Tech.) Pharmaceutical Chemistry	Design, synthesis of novel antimicrobial agents
PROFESSOR P. R. VAVIA		
Dr. Lalitkumar vora	PhD (Tech) Pharmaceutics	Polymeric particulate system for biomolecule delivery
Dr. Preeti Wavikar	PhD (Tech) Pharmaceutics	Lipid based nanocarrier for brain delivery

M. PHARM

Name	Title
Professor M. S. Degani	
Ms. Mamta M. Parekh	Physicochemical properties of potential therapeutic agents
Ms. Priya Shivagan	Metabolism studies of potential therapeutic agents
Ms. Bhagyashri U. Mantri	Extraction of Carotenoids from tagetes erecta
Professor P. D. Amin	
Devanshi Shah	Formulation Development of Topical Dosage form using Hot met extrusion
Dr. G. U. Chatubhuj	
Mr. Pranav S. Bang	Improved synthesis of ursodeoxycholic acid and microwave- assisted synthesis of 3,4- dihydropyrimidine-2 (1H)- Thiones using ammonium Thiocyanate
Dr. H. K. Chaudhari	
Mr. Akshata R. Pahelkar	Design & synthesis o fanitmicroagensts
Professor A. R. Juvekar	
Mr. Mohan lal	Neuroprotective effect of Hesperidin in lipopolysaccharide induced memory impairment model of Alzheimer disease in mice
Mr. Manik Bainwad	To evaluate the activity of L-Theanine in Lipopdy saccharide induced cognitive impairment
Professor K. S. Laddha	
Mr.Vilas Jagtap	Phytochemical investigation on baccopa monnieri.
Ms.Nikita Lukkundi	Separation of phosphatidylcholine from soya lecithin
Professor V. B. Patravale	
Mr. Lalit Bhatia	Novel Rectal Formulation of Mesalamine For Ulcerative Colitis
Mr. Soumya M K	Oral Artemether-Clindamycin combination for improved anti-malarial therapeutics
Professor S. Sathaye	
Mr. Aditya Mali	Formulation and evaluation of anti cataract activity of ethyl acetate fraction of Saraca Indica
Mr. Dattatrya G. Sirsat	Mitochondrial dysfunction in Alzheimer disease
Mr. Afroj Shaikh	Evaluation of phytoconstituents on STZ induced diabetic retinopathy
Dr. V. N. Telvekar	
Mr. Krishnakumar Yadav	Design, Synthesis and evaluation of DAP antimetamolites
Professor P. R. Vavia	
Mr. Patil Mayur	Formulation and Evaluation of bilayer system for Eletriptan hydrobromide
Mr. Nakhva Yash	Formulation and Evaluation of modified drug delivery system for Darifenacin hydrobromide

M. TECH.

Name	Title
Professor K. G. Akamanchi	
Mr. Chate Abhijit	Design, synthesis and evaluation of DAP antimetamolites
PROFESSOR P. D. Amin	
Mr. Barde Omesh	Enteric Coating of Tablets and Pellets with different polymers

DR. PRAJAKTA DANDEKAR JAIN	
Ms. Patil Jyoti	Extraction of vitamin D from button mushrooms using deep eutectic solvent and its fortification in salt
Ms. Atale Sonal	Effect of charge on protein nanoparticles interaction
Ms. DhawaneManasi	Colorimetric detection of cholesterol using chitosan nanofiber
PROFESSOR K. S. LADDHA	
Mr. Sachin Vyavhare	D-limonene from citrus fruit and its industrial application
PROFESSOR SADHANA SATHAYE	
Mr. Somnath Patil	Enzymatic extraction of Psoralen from plant source
DR. V. N. TELVEKAR	
Mr. Sushil D. Chavan	Design, synthesis and evaluation of novel thiadiazole derivatives as antimicrobial agents from cinnamic acid

MAJOR ACCOMPLISHMENTS:

PROFESSOR M. S. DEGANI

Prof. Degani has been a Professor in Pharmaceutical Chemistry since 2006 and is currently Head of Department of Pharmaceutical Sciences and Technology. She has more than sixty five publications in international peer reviewed journals and has a Scopus h-index of 14. She has filed two international and several Indian patents. She has also co-authored a book on retro synthesis. She is actively involved in various industrial projects and consultancy in the areas of process chemistry and drug discovery.She has guided 17 PhD and over Masters' students. Currently there are 15 PhD students and 4 Masters' students working in her research group. Dr. Degani has been awarded the Distinguished Alumni Award by C. U. Shah College of Pharmacy in 2007 Mumbai, Gharda Award for research publications in 2009 and Best Teacher Award of ICT 2013 and 2015. She is a fellow of the Maharashtra Academy of Sciences.

DR. PRAJAKTA DANDEKAR JAIN

- Galenus-Privatstiftung Award, Austria, 2016 to attend the 43rd Annual Meeting and Exposition of the Controlled Release Society, Seattle, USA, July 2016
- 'Gandhian Young Technological Innovation Award 2016' based on work related to the development of Development of a novel, non-biological pyrogen/ microcellular components detection technique for purification and depyrogenation of water', March 2016 (Award winners: Vijay Yadav, Rohan Chhabra, Nikhil Kalane, AnomitraDey and Tejal Pant awarded at RashtrapatiBhavan by Honourable Dr. RaghunathMashelkar)
- Third Prize during 7th Edition BEST-INDIA 2015 (Biotechnology Entrepreneurship Student Teams) sponsored and promoted by DBT, Govt. of India and managed by Association of Biotechnology Led Enterprises – ABLE, February 2016 (Winning Team: Vijay Yadav, Rohan Chhabra, Nikhil Kalane, AnomitraDey and Tejal Pant)

PROFESSOR K. S. LADDHA

- 4 Monographs in Quality Standards of Indian Medicinal Plants' Volume 13, 2015, published by Indian Council of Medical Research, New Delhi as a part of ICMR project.
- 13 Monographs in Quality Standards of Indian Medicinal Plants' Volume 15, 2017, published by Indian Council of Medical Research, New Delhi as a part of ICMR project.

PROFESSOR V. B. PATRAVALE

- Shri Amrut Mody Distinguished Researcher Award by Indian

Pharmaceutical Association Maharashtra State Branch's AmrutMody Research Fund Committee (2018)

- UGC-BSR Mid Career Award Grant 2018 by University Grants Commission
- Gandhiaan Young Technological Innovation (GYTI) award 2018 under category MLM (More from less for Many) by BIRAC-SRISHI (2018)
- Gandhiaan Young Technological Innovation (GYTI) award 2018 under category Socially Relevant Innovation by BIRAC-SRISHI (2018)

PROFESSOR S. SATHAYE

- 2 student awarded Ph. D. degree, 4 students awarded masters' degree.
- 10 peer- reviewed publications in international journals.
- Recipient of 3 awards for presentations (oral and poster) in national and international conferences and industry defined problems.
- Expert pharmacologist on various scientific committees.
- poster presentations in national and international conferences.

PLACEMENT DATA

B. PHARM

Sr. No.	FullName	Roll No	Jobber/ Apper	Jobber status	Placed At	Package	Remarks
1	Sachin Ramraj Kori	13PHE1029	Jobber	placed	Spinco Biotech Pvt Ltd.	-	-
2	Deepti Suresh Mataghare	14PHA1001	Jobber	placed	Astrazenca	3.58	-
3	Monil Mehul Shah	14PHA1002	Jobber	placed	Biocon	2.92	-
4	Samruddhi Vidyadhar Subhane	14PHA1003	Appear	-	Bombay College of Pharmacy	-	Master
5	Sanjay Santaram Malge	14PHA1004	Appear	-	ICT Mumbai	-	Master
6	Jesal Rajkumar Makwana	14PHA1005	Appear	-	Competative Exam Preparation	-	-
7	Ajay Anant Gawali	14PHA1006	Appear	-	MPSC Exam Preparation	-	-
8	Amol Balu Gare	14PHA1007	Appear	-	ICT Mumbai	-	Master
9	Pradnya Ashok Ingle	14PHA1008	Appear	-	Pune College of Pharmacy	-	Master
10	Sanjana Sanjay More	14PHA1009	Appear	-	Competative Exam Preparation	-	-

11	Kalyani Vilas Desale	14PHA1011	Appear	-	National Institute of Pharmaceutical Education and Research,Mohali	-	Masters
12	Rupam Ashok Singh	14PHA1012	Appear	-	NIPER, Mohali	-	Masters
13	Ravindra Phulpagar Saili	14PHA1013	Appear	-	Competative Exam Preparation	-	-
14	Umang Sunil Amrutkar	14PHA1014	Jobber	placed	Zenkem	-	-
15	Tanishka Satyajit Saraf	14PHA1015	Appear	-	Mercer University	-	Ph.D in Nuero Pharmacology
16	Singh Vaibhav	14PHA1016	Appear	-	Competative Exam Preparation	-	-
17	Neha Ramesh Pai	14PHA1017	Appear	-	ICT, Mumbai	-	Master
18	Snehal Sunil Daware	14PHA1018	Appear	-	National Institute of Pharmaceutical Education and Research,Mohali	-	-
19	Ankita Narendra Kshatriya	14PHA1020	Appear	-	National Institute of Pharmaceutical Education and Research,Mohali	-	-
20	Sonali Makarand Vaidya	14PHA1021	Jobber	placed	Innovation Biological for Internship	-	-
21	Akanksha Madhav Kale	14PHA1022	Appear	-	Mercer University	-	-
22	Keyur Ravindrakumar Rane	14PHA1023	Appear	-	Competative Exam Preparation	-	-
23	Swaraj Ganpat Pawar	14PHA1024	Appear	-	Competative Exam Preparation	-	-
24	Revathi Tharmaraj Reddy	14PHA1027	Appear	-	University of Alberta, Edmonton, Canada	-	MS in Chemical Biology

25	Bilva Nitin Burkule	14PHA1028	Appear	-	Competative Exam Preparation	-	-
26	Parth Nimish Kadakia	14PHA1029	Appear	-	ETH ZÜRICH, Switzerland	-	MS
27	Shruti Vijay Awari	14PHA1030	Appear	-	NIPER, Mohali	-	Master
28	Saina Sanjay Prabhu	14PHA1031	Appear	-	Creighton University	-	MS
29	Aditya Rajesh Kamat	14PHA1032	Appear	-	Indian Institute of Science	-	-

3.58	Highest package
2.92	Minimum Package
3.25	Median

B. TECH. PHARMA

Sr. No.	FullName	Roll No	Jobber/ Apper	Jobber status	Placed At	Package	Remarks
1	Juhi Viraj Salgaonkar	14PHT1001	Appear	-	-	-	Phd
2	Priyanka Shankar Pawar	14PHT1002	other	-	Competative Exam Preparation	-	-
3	Kushal Dilip Dhake	14PHT1003	Appear	-	Competative Exam Preparation	-	-
4	Chinmay Hemant Khanolkar	14PHT1004	Appear	-	IIT Pr	-	-
5	Abhishek Anil Naik	14PHT1005	Jobber	Placed	Biocon	2.92	
6	Saquib Salim Shaikh	14PHT1006	Jobber	Placed	Glenmark	7.5	(7Lac+50000 bonus)
7	Vishvesh Janardan Raje	14PHT1007	Appear	-	Competative Exam Preparation	-	-
8	Sandeep Santosh Sadgir	14PHT1008	Jobber	Placed	Biocon	2.92	-
9	Shashank Kamlesh Bhangde	14PHT1009	Appear	-	-	-	MS
10	Pooja Jitendra Kotwal	14PHT1010	Jobber	Placed	Glenmark	7.5	(7Lac+50000 bonus)

11	Manan Chandraj Shah	14PHT1012	Appear	-	-	-	Phd
12	Ayush Aditya Pal	14PHT1013	Appear	-	-	-	Phd
13	Himani Ravindra Garud	14PHT1014	Jobber	Placed	Biocon	2.92	-
14	Mrunmayee Chandrashekhar Patil	14PHT1015	Appear	-	Competitive Exam Preparation	-	-
15	Pratik Nitin Dalvi	14PHT1017	Appear	-	-	-	ms
16	Nidhi Raghuram -	14PHT1020	Appear	-	-	-	Phd

7.5	Highest package
2.92	Minimum Package
2.92	Median

POST GRADUATE

Sr. No.	Name	RollNo	Offer Letter	Job App	Job Status	Placed At	Package	Remarks
1	Aakash R. Madhwani	16PHC201	Yes	Jobber	Placed	Abbott	6	-
2	Nitin P. Ahuja	16PHC202		Jobber	Placed	Abbott	6	-
3	Preeti M. Verma	16PHC203	Yes	Jobber	Placed	Abbott	6	-
4	Reyniel B. Carvalho	16PHC204	Yes	Jobber	Placed	Abbott	6	-
5	Shahnawaz I. Qureshi	16PHC205	-	Jobber	Placed	Dr. Reddy	-	-
6	Vishal A. Bansode	16PHC206	-	Jobber	Placed	Dr. Reddy	-	-
7	Jyoti S. Batgire	16PHM201	-	Jobber	-	-	-	-
8	Limbraj B. Rakh	16PHM202	-	Jobber	-	-	-	-
9	Shilpee G. Chanda	16PHM203	-	Jobber	-	-	-	-
10	Vishu M. Jain	16PHM204	Yes	Jobber	Placed	Biocon	3.7	-
11	Shubham G. Mulange	16PHM205		Jobber	Placed	Spinco Biotech Pvt Ltd.		Refuse order
12	Aparana Dogra	16PHP201	Yes	Jobber	Placed	Abbott	6	-

13	Chaitali R. Bora	16PHP202		Jobber	Placed	Dr. Reddy	4.5	-
14	Sagar S. Chandane	16PHP204	Yes	Jobber	Placed	Abbott	4.5	-
15	Sheetal M. Oholkar	16PHP205	Yes	Jobber	Placed	Spinco Biotech Pvt Ltd.	-	-
16	Shivam Swarnkar	16PHP206		Jobber	Placed	Glenmark Pharmaceuticals	7.5	-
14	Devendra Singh Meena	16PHP203		other				Left

PG PHARM BIOTECH.

Sr. No.	Name	Roll No.	Job App	Job Status	Placed At	Package
1	Anjana P Menon	16PBT201	Jobber	-	-	-
2	Safala S. Malvankar	16PBT202	Jobber	-	-	-
3	Pritam Vishnu Bagwe	16PBT203	Jobber	-	-	-
4	Nagendra P	16PBT204	Jobber	-	-	-
5	Km Nazima	16PBT205	Jobber	Placed	Intas Pharma	-
6	Hiral Mukesh Vegad	16PBT206	Jobber	Placed	Enzene	4
7	Revati D. Dhayfule	16PBT207	Jobber	-	-	-
8	Nikita Ashok Aware	16PBT208	Other	-	-	-
9	Pramod M. Jadhav	16PBT209	Jobber	placed	Intas pharma	-
10	Paramita Batabyal	16PBT210	Jobber	placed	Intas pharma	-

M. TECH. PHARMA

Sr. No.	Name	Roll No.	Offer Letter	JobApp	Job Status	PlacedAt	Package
1	Arkasubhro A. Chatterjee	16PHT201		Apper			
2	Gajanan D. Indurkar	16PHT202	Yes	Jobber	Placed	Spinco Biotech Pvt Ltd.	-
3	Manisha M. Sannake	16PHT203	Yes	Jobber	Placed	Abbott	-
4	Neha J. Pawar	16PHT204	Yes	Jobber	Placed	wockhardt	-
5	Prarthana P. Mistry	16PHT205	Yes	Jobber	Placed	Biocon	5.28
6	Satish L. Wagh	16PHT206	Yes	Jobber	Placed	Cipla	-
7	Sonali A. Agarkar	16PHT207	-	Jobber	-	-	-
8	Suraj S. Kapale	16PHT208	-	Jobber	-	-	-

5.28	Highest Package
5.28	Lowest Package

VISITING FACULTY 2017-18

Sr. No	Name
1	Mrs. Sulabha A. Phadnis
2	Mr. Rajesh Ramaswamy
3	Dr. Dimple R. Bhatia
4	Mrs. Bhagyashree Joshi
5	Mrs. Pratibha A. Daroi
6	Mrs. Mrinal M. Sanaye
7	Ms. Shefali Chutke
8	Ms. Rama Iyer
9	Mrs. Poonam Dhake
10	Prof. P. A. Sathe
11	Dr. Smita Limaye
12	Dr. Vishwas Sangale
13	Dr. Deepavali R. Thanekar
14	Mr. V. Y. Sane
15	Dr. Geeta Godbole
16	Dr. Parizad Elchidana
17	Mr. Dipesh Uday Suvarna
18	Dr. Divya Lal Saxena
19	Dr. Sujata Sawarkar
20	Dr. Ujwala Shinde
21	Dr. Rajani Athavale
22	Dr. Mudra Kapoor
23	Dr. Archana Iyer
24	Dr. Amol Hule
25	Dr. Meena Kanyalkar
26	Dr. Vrushali Keer
27	Prof. Vijayalaxmi S. Suvarna

FINAL YEAR BACHELOR OF TECHNOLOGY IN-PLANT TRAINING

Full Name	RollNumber	Industry Name
JuhiSalgaonkar	14PHT1001	Abbott Healthcare Pvt Ltd
PriyankaPawar	14PHT1002	Ajanta Pharma Limited
KushalDhake	14PHT1003	CIPLA
ChinmayKhanolkar	14PHT1004	Sedan Fine Chemicals

AbhishekNaik	14PHT1005	Raptakos Brett & Co. Ltd
SaquibShaikh	14PHT1006	Wockhardt Biopharmaceuticals Ltd.
VishveshRaje	14PHT1007	Glenmark R & D Centre
SandeepSadgir	14PHT1008	Aarti Drugs Ltd.
ShashankBhangde	14PHT1009	Johnson and Johnson Pvt Ltd
Poojakotwal	14PHT1010	GSK
MananShah	14PHT1012	Alkem Laboratories
AyushAditya Pal	14PHT1013	Sanofi India Ltd.
HimaniGarud	14PHT1014	GlaxoSmithKline Limited
MrunmayeePatil	14PHT1015	Watson Pharma PVT.LTD
Pratik Dalvi	14PHT1017	Biocon Limited
NidhiRaghuram	14PHT1020	Cheryl laboratories Pvt. Ltd

Tata Education and Development Trust Scholarship for meritorious students from Department of Pharmaceutical Sciences and Technology (Value decided by trust)

Sr. No.	Name of the Student	Year of the Study	Discipline / Specialization	Amount (Rs.)
1.	Miss. Zubiya N. Pathan	S. Y. B. Pharm	Pharmacy	35,000/
2.	Mr. Purav Jignesh Shah	T. Y. B. Pharm	Pharmacy	32,000/
3.	Ms. Apurva Rajesh Pardeshi	T. Y. B. Pharm	Pharmacy	32,000/
4.	Ms. Drashty Prashant Mehta	T. Y. B. Pharm	Pharmacy	32,000/
5.	Ms. Shweta Venugopal Sabu	T. Y. B. Pharm	Pharmacy	32,000/
6.	Miss. Tanvi Patil	T. Y. B. Pharm	Pharmacy	32,000/
7.	Miss. Shakshi B. Singh	T. Y. B. Pharm	Pharmacy	32,000/
8.	Miss. Aashvi H. Jain	T. Y. B. Pharm	Pharmacy	32,000/
9.	Miss. Gauri S. Bhatkhande	T. Y. B. Pharm	Pharmacy	32,000/
10.	Miss. Poorva S. Taskar	T. Y. B. Pharm	Pharmacy	32,000/
11.	Miss. Shreya S. Dalvi	T. Y. B. Pharm	Pharmacy	32,000/
12.	Mr. Nilesh S. Kulkarni	T. Y. B. Pharm	Pharmacy	32,000/
13.	Miss. Chaitali P. Shah	T. Y. B. Pharm	Pharmacy	32,000/
14.	Miss. Ragini R. Pillay	T. Y. B. Pharm	Pharmacy	32,000/
15.	Miss. Pooja G. Naik	T. Y. B. Pharm	Pharmacy	32,000/
16.	Miss. Aishwarya Bhasi	T. Y. B. Pharm	Pharmacy	32,000/
17.	Miss. Akanksha Madhav Kale	Final Y. B. Pharm	Pharmacy	29000/-
18.	Miss. Tanishka Satyajit Saraf	Final Y. B. Pharm	Pharmacy	29000/-
19.	Mr. Aditya R. Kamant	Final Y. B. Pharm	Pharmacy	29000/-
20.	Miss. Sonali Makarand Vaidya	Final Y. B. Pharm	Pharmacy	29000/-
21.	Miss. Saina S. Prabhu	Final Y. B. Pharm	Pharmacy	29000/-

22.	Mr. Vaibhav Singh	Final Y. B. Pharm	Pharmacy	29000/-
23.	Mr. Keyur R. Rane	Final Y. B. Pharm	Pharmacy	29000/-
24.	Miss. Rupam A. Singh	Final Y. B. Pharm	Pharmacy	29000/-
25.	Miss. Sanjana S. More	Final Y. B. Pharm	Pharmacy	29000/-
26.	Miss. Bilva N. Burkule	Final Y. B. Pharm	Pharmacy	29000/-

ABSTRACT OF THESIS

PH D (TECH.)

Student: Dr. Santosh Gejage

Supervisior: Prof. P. D. Amin

Hot Melt Extrusion technology is one of the most common processing techniques in the plastic industry and is gaining significance in the array of pharmaceutical processing. The numerous excipients are available for hot melt extrusion such as polymeric materials (Soluplus, Kollidone VA 64) Plasticizers, matrix agents & lipid materials. Lipid excipients have been refined & fine-tuned for the pharmaceutical industry to provide solutions to drug delivery challenges including drug solubility, sustained release &nanosystems through continuous production hot melt extrusion technology. The right selection of good lipids for hot melt extrusion process is the key to successful formulation. Glycerylmonostearate was evaluated as meltable binder and as sustained released agent. Niacin sustained release tablets were prepared by using two different GMS sources. Sample treatments were given to raw GMS samples to understand the effect of stress conditions. DSC, XRD, Melt viscosity study revealed polymorphic changes in GMS samples. The stable beta form of GMS helped to maintain the stability of niacin tablets. TacrolimusNanoemulsion were prepared by a continuous manufacturing high pressure homogenization-Hot melt extrusion technology. Emulsion were optimized and assessed for globule size, zeta potential& drug content. In-Vitro permeation study & In vivo efficacy study revealed that nanosized formulations are better performing than marketed ointment system. Lipid based solid dispersion containing crystal suspension of BCS class II drug Irbesartan were prepared by conjugation technology high pressure homogenization-Hot melt extrusion technology. Immediate release tablets of sitagliptin and vildagliptin were prepared by direct compression method.

Student: Dr. Sagar Bachhav

Supervisor: Prof. Padma V. Devarajan

DEVELOPMENT AND PRECLINICAL EVALUATION OF DRUG DELIVERY SYSTEMS FOR TARGETED DELIVERY

Part I: Oral nanocarriers for targeting to the lung

The promise of oral nanoparticles, intended for targeting, depends upon their intact transit through the gastric environment, towards the intestine, to enable uptake by the Peyer's patches (PP) of the lymphatic system. We report hydrophobization of mucoadhesive Rifampicin-Gantrez®AN-119 nanoparticles (GzNP) using lipid (GMS) [LIPOMER] or hydrophobic polymer ethyl cellulose (EC) [PHOBOMER], with the objective of limiting gastric retention and favoring increased intestinal localization, to facilitate enhanced lymphatic uptake through the Peyer's patches to enable lung targeting.

GzNP, LIPOMER, and PHOBOMER were prepared by modified nanoprecipitation method. LIPOMER was optimized by QbD approach using Box-Behnken design. The independent variables were concentration of Gantrez, concentration of docusate sodium and stirring rate, while the dependent variables were particle size, entrapment efficiency, mucoadhesion and hydrophobicity. Increased hydrophobicity and decreased mucoadhesion were evident with an increase in lipid: Gantrez ratio. The PHOBOMER (ECGzNPs) also revealed an increase in hydrophobicity with an increase in EC: Gantrez ratio. The selected formulations namely GzNP, LIPO-120 and

ECGzNP2, exhibited average particle size in the range 300-450 nm RIF loading >15% and negative zeta potential (-20 to -30 mV). Contact angle and mucoadhesion force measurements demonstrated hydrophobicity in the order GzNP<<LIPO-120<ECGzNP (30.3±2.1°<52.7±3.5°<67.3±3.5°) and mucoadhesion in the reverse (87.0±3.0g> 40±6.3g>30.7±4.8g). DSC and XRD analysis confirmed complete amorphization of RIF. At alkaline pH, GzNP and LIPO-120 revealed sustained release (T50~7h), while ECGzNP2 demonstrated controlled release of RIF (T50=14.5h) and no drug release at pH 1.2. Nanoparticles were stable at 30°C/65% RH.

Intraduodenally administered coumarin labelled nanoparticles in rats displayed PP uptake and lung: liver RIF ratio in the order of ECGzNP2>LIPO-120>>GzNP. Gastrointestinal transit study revealed higher ($p<0.05$) intestine-to-stomach RIF ratio with ECGzNP2 (3.6) than GzNP (1.2), confirming increased intestinal accumulation with hydrophobization. The bioavailability of ECGzNP2 was significantly higher than GzNP and RIF. AUC/MIC ratio, an indicator of efficacy, was 1.7-fold and 1.5-fold higher with ECGZNP2 than free-RIF and GzNP, respectively. ECGzNP2 demonstrated higher lung: liver ratio confirming higher lung accumulation with lower hepatic exposure. Safety and possible reduced hepatotoxicity of ECGzNP2 was confirmed in a subacute toxicity study. Thus, our study demonstrates PHOBOMER (ECGzNP2) as a promising nanocarrier with promise for superior efficacy in pulmonary tuberculosis.

Part II: Drug Delivery Systems (DDS) for nose-to-brain targeting of anti-epileptic drugs

We propose an innovative intranasal (IN) formulation of DZP and MDZ, namely Aqua Triggered In Situ(ATIS) Gelling Diazepam(ATIS-DZP) and Midazolam(ATIS-MDZ), as an alternative to the injection for epileptic emergencies. ATIS gel is a polymer free in-situ gelling microemulsion which gels instantaneously on contact with minute quantities of water to form a mucoadhesive gel. ATIS-DZP and ATIS-MDZ (1mg/100µL) were prepared by simple solution in microemulsion components. Drug loading did not affect gelling ability and mucoadhesion. The ATIS exhibited globule size <160 nm, low viscosity and good stability as per ICH guidelines.

A LC-MS/MS method was validated for the bioanalysis of DZP. Brain-uptake at the cortex was monitored by brain-microdialysis technique, a highly sensitive technique to monitor free drug. The microdialysis experiment was optimized for probe implantation and drug recovery in-vivo and also in-vitro. IN administration revealed immediate absorption with rapid and high brain-ECF concentration compared to IV. ATIS-DZP revealed ~2-fold enhancement in brain-AUC compared to IN and IV free-DZP and significantly higher direct transport potential (%DTP) and drug targeting efficiency (%DTE). Five different multicompartment theoretical models were proposed using the Phoenix NLME Software and the IV and IN data analyzed. While Model 3 with three compartments [central (blood), brain and peripheral] and additional first-order elimination rate constant for fraction DZP removed from brain revealed best fit for the IV data, the model-5 with two absorption pathways (nose-to-systemic and nose-to-brain) demonstrated best fit for the observed and predicted data following IN administration. It showed significant improvement in goodness of fit as reflected from a reduction in objective function value and diagnostic visual prediction plots, hence confirming the presence of direct nose-to-brain targeting following IN administration. When studied for nasal safety, the free-DZP and positive-control showed marked histopathological alterations in the nasal mucosa. However, minimal histological changes were evident with ATIS-DZP which were reversible. Thus the IN ATIS-DZP showed promise of higher direct nose-to-brain targeting, better safety and hence has an immense implication in the treatment of epileptic emergencies. Abstract

Student: Dr. Shilpa Dawre

Supervisor: Prof. Padma V. Devarajan

CONTROLLED RELEASE IN SITU PARENTERAL DEPOT FORMULATIONS

Sustained release in situ parenteral DDS are patient friendly systems favour ease of scale up and easy administration through fine gauge needles. Such systems can be designed to form in situ implants or particulate systems. In the present thesis we reported two types of in forming situ implants 1. Liquid crystalline preconcentrates (LCPr) which converted in to in situ gelling implants; 2. In situ particulates based implants. Rapid transition of LCPr to liquid crystalline phases (LCP) enabled in situ gel formation for controlled drug delivery while polymeric solution generated in situ particulates upon injection.

Sustained Release in Situ Gel for malaria: Arteether (ART) &Artemisinin based combination therapy [ART-Lumefantrine (LUM) combination]

The solubility of ART and LUM was determined in various oils, surfactants and cosolvents and ternary phase diagrams were constructed to identify in situ gel region. LCPr with biodegradable polymer (P-LCPr) lipid (L-LCPr) loaded with 100mg/mL of ART/ ART (20mg) and LUM (120mg)/mL in combination were successfully designed and stabilized. The in vitro implant formation due to LCP was confirmed by XRD, POM, rheological changes and SANS. Ease of injectabilityin vitro and ex vivo in extensor digitorum longus muscle was confirmed using texture analyzer. Sustained release over 3 days was verified in an ex vivo release model using extensor digitorum longus muscle of Gallus gallusdomesticus, suggesting P-LCPr/L-LCPr for single shot therapy as an alternative to conventional 3-day ART intramuscular injections. In vitro myotoxicity study in extensor digitorum muscle of rat confirmed muscular safety. Antimalarial activity was evaluated by modified Peter's 4-day suppressive test of P-LCPr& L-LCPr in male swiss mice infected with lethal ANKA strain of Plasmodium berghei. Control marketed formulation showed recrudescence and 100% mortality within 20 days. Complete protection with no mortality in the modified Peter's 4 day at 1/40th of the therapeutic dose by P-LCPr, while only at 1/20th of therapeutic dose by L-LCPr. In the clinical simulation study marketed formulation showed high parasitemia and mortality within 15 days, the P-LCPr of ART-LUM showed superior clinical efficacy. Further complete cure was seen at 1/20th with no recrudescence of the parasites till day 45 and no mortality. The high antimalarial efficacy with the possibility of patient friendly single shot therapy proposes P-LCPr of ART-LUM as a promising new therapeutic alternative for malaria. - 9 -

Controlled Release in Situ Gel of Bupravaquone (BPQ) for Theileriosis – A veterinary Infection

Bupravaquone (BPQ) used for the treatment of theileriosis is administered as three i.m. injection and associated with low bioavailability. P-LCPr incorporating BPQ exhibited formation of LCP, ease of injectability, intramuscular safety and stability as per ICH guidelines. Superior bioavailability and >90% RES targeting compared to marketed formulation (~20%) confirmed targeted delivery and potential for single shot therapy of BPQ.

Sustained release in Situ Particulates based implant for development of 80kda HSA Peptide-1 vaccine for Male Contraception

The in situ particulates based implants were designed for i.m. administration of 80kDa HSA peptide-1 as an alternative to Freund's adjuvant. The vaccine formulation comprised of polymer, the antigen KLH conjugated 80 kDa HSA peptide-1 dissolved in suitable solvents. The antigen exhibits good stability and the formulations were readily syringeable. Formulations revealed heterogeneous particles formation in situ. Active immunization of rabbits revealed high antibody titer over peptide alone and blank formulation exhibiting promise.

Student: Dr. Babar Shrikant
Superviosior: Prof. K. S. Laddha

CHEMICAL MODIFICATION OF TRITERPENOIDS

Triterpenoids are a diverse group of natural products in plants and are considered defensive compounds against pathogenic microbes and herbivores. Because of theirwide-ranging medicinal applications triterpenoids shows various beneficial properties for humans.

The objective of this research work is to present the methods for separation of important pentacyclic triterpenoids from medicinal plants. Methods were developed for extraction and isolation of a naturally occurring ursolic acid from Nerium indicum, betulin from Betula utilis and lupeol from Crataeva nurvala respectively, followed by preparation of new analogous thereof and their analysis using RP-HPLC, IR & NMR. New HPLC method of estimation for ursolic acid, lupeol, & betulin in Butilis were developed. Imino, monoalkyl, dialkyl & phthalic acid derivatives of ursolic acid & betulin were also prepared.

Keywords: *Nerium indicum, Betula utilis, Crataeva, nurvala, triterpenoids, ursolic acid, betulin, lupeol, isolation, characterization, HPLC, nucleophilic substititution, synthesis, derivatives.*

Student: Dr. Snehal Bhandare
Superviosior: Prof. K. S. Laddha

NATURAL FLAVONOIDS: THEIR EXTRACTION, ISOLATION AND CHEMICAL MODIFICATION

Flavonoids are important bioactive polyphenolic compounds in kingdom plantae. They are the largest groups of plant secondary metabolites which exist in the free aglycones and the glycoside forms and are differentiated into flavonols,flavones, flavanones, flavanols, isoflavones, catechins, anthocyanins. Present study dealt with the isolation and development of extraction technology for some naturally occurring flavonoids such as kaempferol and quercetin from Podophyllum hexandrum, gardenin A from Gardenia gummifera gum resin, karanjin from Pongamia pinnata. Extraction technology has been optimized for isolation of these compounds. Hesperidin from Citrus sinensis was isolated for some chemical studies. Analytical methods were developed for estimation of various flavonoids individually and in combination in various extract such as kaempferol, quercetin in Podophyllum hexandrum by HPTLC and gardenin A in Gardenia gummifera gum resin by HPLC. Chemical modifications using hydrazine hydrate were carried out on karanjin and hesperitin; the aglycone of hesperidin. All the isolated and synthesized compounds were characterized using TLC, UV, IR, Mass and NMR spectroscopic data.

Keywords: *flavonoids, isolation, Podophyllum hexandrum, Gardenia gummifera, Pongamia pinnata, Citrus sinensis,*

kaempferol, quercetin, gardenin A, karanjin, hesperidin, characterization, HPLC, HPTLC

Student: Dr. Priya Ghumatkar
Supervisor: Prof. Sadhana Sathaye

SCREENING OF NEW THERAPEUTIC ENTITIES IN ALZHEIMER'S DISEASE.

Alzheimer's disease (AD) is characterized by neuronal loss, extracellular senile plaques, and intracellular neurofibrillary tangles, leading to memory loss. AD is the most common form of dementia; and is predicted to affect 1 in 85 people globally by 2050. In India 38.3% out of the total dementia population is suffering from AD. The current therapeutic approach is mainly based on increasing the cholinergic neurons activity or inhibiting the acetylcholinesterase (AChE) enzyme. Acetylcholine replacement strategies include Donepezil, Galantamine (selective AchE inhibitors), Rivastigmine (Non-selective cholinesterase inhibitor), and Memantine (Non-competative NMDA receptor antagonist.) Various drugs have also failed in the Phase II Clinical trials of drug discovery process. Hence, there is a pressing need of this hour to develop a new therapy for the betterment of the AD patients. Taken into consideration the above aspects the objective of the present research work was to develop a disease-modifying therapeutic strategy in the treatment of AD.

Part I- Preliminary screening of the phloretin in scopolamine induced amnesia in mice model In this study, mice were pretreated with PHL 2.5mg/kg, 5mg/kg, 10mg/kg and Donepezil (DON) 1mg/kg intraperitoneally (i.p) for 14 days. Last 7 days treatment regimen included daily injection of SCP 1.5mg/kg to induce cognitive deficits. PHL was found to significantly improve the performance of mice in morris water maze test, decreased the AChE activity and GFAP levels. Also, PHL

significantly elevated the activity of antioxidant enzymes activities and BDNF levels in comparison with SCP group. These research findings suggested that PHL has nootropic, neuroprotective and neurotrophic activity in SCP induced memory impaired mice and hence, is a promising therapeutic moiety in the treatment of AD.

Part II- Evaluation the ameliorative effect of phloretin in Aβ (25-35) induced sporadic AD in wistar rats. The objective was to evaluate the effect of phloretin in a chronic model of sporadic AD by injecting Aβ25-35 peptide sequence intracerebroventricularly (icv). In this study, phloretin improved the spatial memory formation and retention in Barnes maze test. Additionally, phloretin alleviated the antioxidant defense biomarkers and thereby reduced oxidative stress, decreased TNF-αmediated neuroinflammation. Furthermore, phloretin decreased the amyloid beta deposits and pyknotic nuclei in the dentate gyrus regions of the Aβ 25-35 injected rat brains. The results of this study illustrated the ameliorative effect of phloretin in this chronic model of AD.

Part III- Investigation of the effect of phloretin on Aβ (1-42) induced impaired adult

neurogenesis and synaptic dysfunction. The extended aim of this study was to evaluate the effect of phloretin at the neuronal level and synaptic level. The Aβ (1-42) injections were performed in wistar rats to induce impairment in adult neurogenesis and synaptic dysfunction. phloretin was found to impart neuroprotection against the toxicity of Aβ (1-42). The above results prove the possible role of phloretin as good candidate in the treatment of Alzheimer's disease.

Student: Dr. Devang Dhimant Sarvaiya

Supervisor: Prof. Sadhana Sathaye

PHARMACOKINETIC AND PHARMACODYNAMIC EVALUATION OF THERAPEUTIC MOIETIES AS AN ADJUNCT IMMUNOTHERAPY IN TUBERCULOSIS

Tuberculosis (TB) is one of the most common and deadly infectious diseases with incidence of around 9 million new cases every year causing 1.5 million deaths worldwide from its single casual pathogen, Mycobacterium tuberculosis. Over 40% of India's population are infected with TB with an annual incidence of two million new cases. This situation is further exacerbated due to issues such as (i) long, complex and ineffective chemotherapy against newly emerging, multi-drug resistant (MDR), extensively drug resistant (XDR)/totally drug resistant (TDR) TB strains, (ii) incompatibilities between anti-TB and anti-HIV drugs, and (iii) weakened immunity among the individuals, and (iv) variable bioavailability of standard anti-tubercular drugs. Our research focuses on evaluation of bioavailability of Rifampicin formulations developed using HME technology and in presence of antibiotics and antiviral agents that are generally used with Rifampicin. In addition, we screened phytoconstituents for their anti-tubercular activity alone and in combination with Rifampicin and Isoniazid.

Part I: Development and validation of bio-analytical HPLC method of Rifampicin

A rapid, specific, accurate and validated HPLC–UV method was developed for quantification of Rifampicin in the rat plasma. Rifampicin was extracted using combination of plasma: methanol in a ratio of 1:2 in a gradient manner (Time vs % ACN: 1/20, 4/20, 8/80, 13/80, 13.1/40, 14.8/20) for separation of Rifampicin and Diazepam (internal standard). The method was found to be linear for concentration range of 0.19-100 µg/ml.

Part II: Pharmacokinetics of Rifampicin and Rifampicin Fixed dose combinations (FDC's)

Pharmacokinetics of oral plain and HME Rifampicin formulation, intraduodenal plain and HME Rifampicin formulation was carried out. HME formulation of Rifampicin and Isoniazid was developed with segregated release of both drugs and effect on bioavailability of Rifampicin was studied. Effect of antibiotics viz. Azithromycin, Moxifloxacin and CYP3A4 inhibitors such as Ritonavir on bioavailability of Rifampicin was evaluated. HME technology proved to increase bioavailability of

Rifampicin+Isoniazid (3 fold), Rifampicin+Azithromycin (1.95 fold), Rifampicin+Moxifloxacin (1.72 fold) and Rifampicin+Ritonavir (1.42 fold).

Part III: Pharmacodynamics of immunomodulatory phytoactives

Immunomodulatory phytoactives [Thymoquinone (THQ), Glycyrrhizinic acid (GA) and Quercetin(QUE)] were screened for anti-mycobacterial potential using in vitro REMA assays. Interaction potential of the phytoactives was studied with standard anti-TB drugs i.e. Rifampicin and Isoniazid. Macrophage infection model was performed to evaluate the intracellular drug activity of the phytoactives alone and in combination with Rifampicin. Parameters evaluated were effect of drugs on cytokines (TNF-α, IFN-γ and IL-12) and colony forming unit assays.

Among the phytoconstituents studied, THQ was found to be most effective in the in vitro anti-mycobacterial REMA assay with MIC of 12.5 µg/ml. THQ showed 25% - 66% inhibitory effect on MTB in the intracellular macrophage infection model. GA and QUE did not exhibit extracellular anti-bacterial activity in REMA assay. Intracellularly, GA and QUE demonstrated moderate effect on MTB inhibition in the intracellular macrophage infection model. THQ and QUE showed mild effect on immune-modulation. GA was found to have significant effects on the levels of cytokines demonstrating immunomodulatory effects.

Results from the above studies suggest that THQ, GA and QUE might prove to be rationale candidates for further investigation as a template for the development of novel anti-mycobacterial compounds.

Student: Dr. Preeti Wavikar
Supervisor: Prof. P. R. Vavia

LIPID BASED NANOCARRIER FOR BRAIN DELIVERY

The research work proposes formulation and evaluation of lipid based nanocarriers for brain delivery for the treatment ofAlzheimer's disease. Nanoparticles based delivery systems have great potential to facilitate the movement of drugs acrossdifferent biological barriers like BBB and thereby targeting drugs to the brain. Rivastigmine loaded lipid nanocarriers likeLiposomes, Nanostructured Lipid Carriers (NLCs), Niosomes, Lipo- PEG were fabricated using thin film hydration andethanol injection methods. Various formulation and process parameters were optimized to obtain stable lipidnanoparticles. These lipid nanoparticles were characterized using advanced analytical techniques. Further, these lipidnanoparticles were incorporated into an intravenous and in situ gelling nasal system. In situ gelling nasal system wasfurther evaluated using Rheological, Texture and Ex-vivo nasal permeation studies. In-vivo pharmacodynamic study i.e.Morris water maze test revealed the therapeutic effectiveness of nanoparticle formulation with significantly higher

memory enhancing potential compared to plain drug solution. In-vivo pharmacokinetic and biodistribution study in ratsdemonstrated significantly enhanced brain concentration of drug after administration of Rivastigmine Tartarate (RT) loaded lipid nanoparticles as compared to plain RT solution by intranasal and intravenous route, respectively. Ex-vivoenzyme inhibition studies showed significantly higher enzyme inhibition efficacy of both intravenous and intranasallipid nanoparticles compared to plain drug solution.

Sub-acute toxicity studies revealed safety of the developed lipid nanocarrier formulations to the vital organs withoutsignificant changes in haematological and biochemical parameters compared to the control group. Nasal toxicity studiesdid not show any signs of toxicity or inflammation and maintained the integrity of the ciliary epithelial cells, therebyconfirming safety of the formulation for its intended nasal application.

Student: Dr. Lalit Vora
Supervisor: Prof. P. R. Vavia

POLYMERIC PARTICULATE SYSTEM FORBIOMOLECULES DELIVERY

Polymeric particulate system-based Nano/Microtechnology formulation for biomolecules is still an evolving concept. To develop novel, biocompatible polymeric nano-microparticle

formulation for biomolecules is a challenging task for formulator. We have explored following novel formulations in PhD research.

Part I: Development of controlled release formulation of Human Chorionic Gonadotropin (HCG)

In present research work, USFDA approved polymer, PLGA was selected to prepare HCG loaded Microspheres(MS) by double emulsion solvent evaporation method. Optimized formulation was characterised by particle size, FTIR, DSC, SEM. HCG level was checked in rats aftersubcutaneously injecting HCG loaded PLGA microspheres. HCG was detected in rat plasma for more than 11 days.Stability studies of optimized formulation were performed based on ICH guideline.

PartIIa: Development and characterization of controlled release microspheres formulation of Cholecalciferol.

Clinically, there is a protective relationship between sufficient vitamin D status and lower risk of cancer and manyother diseases. To overcome its deficiency, controlled release cholecalciferol (CL) loaded PLGA microsphere depotformulation was developed by single emulsion technique. The optimized formulation showed more than 1 month in-vitro zero-orderrelease profile and controlled release potential (T 1/2 ~ 239h) confirmed by Pharmacokinetic studies in rats. Stabilitystudies of optimized formulation were performed based on ICH guideline.

Part IIb: Novel bilayer microneedle arrays formulation approach for targeted transdermal delivery: Proof ofconcept CL loaded PLGA Nano-Microparticles (NMP) were prepared and characterized for particle size and in-vitro releasestudy. In-vitro release of CL from NMP showedbiphasic sustained release for 5 days. Ex-vivo excised skin penetration with bilayer MN arrays and control patchwere performed with cryostat microtome skin sectioning and analysis by HPLC.

Part IIc: Novel Nanosuspension (NS) based dissolving microneedle arrays for targeted transdermal delivery:

Proof of Concept. In this part, Novel CL NS loaded MN arrays was developed. CL NS was optimized with PVAbased on particle size by sonoprecipitation and subsequently mixed with PVP gel for MN arrays preparation.

Part III: Polysaccharide derivatives for anticancer biomolecules delivery

Anionic carboxymethy-latedpolysaccharide (CMP) was synthesized and these anionic groups were conjugatedpartially with DOX with help of pH sensitive Hydrazine bond (DOX-CMP) and characterized by FTIR, NMR andpH dependent in-vitro release. This anionic DOX-CMP was used to prepare self-assembling Nanocomplexes (NC)with cationic polymer (Poly (allyl) amine, PAA).

M. PHARM

Student : Mr. Suraj More

Supervisor: Prof. Padma V. Devarajan

BRAIN TARGETED DRUG DELIVERY SYSTEMS

Alzheimer's disease is a neurodegenerative disease which due to progressive degeneration results in debilitating condition. A major challenge in Alzheimer's disease therapy is to enable transcytosis of drug across the Blood-Brain barrier (BBB). DHA is a polyunsaturated fatty acid (PUFA) important for brain health and can be transported across the BBB by specific fatty acid transporters. In the present study we rely on DHA and Novel oil with neuroregenerative properties for the design of a Microemulsion system. Curcumin, a promising nutraceutical reported for its anti-Alzheimer's activity and Donepezil hydrochloride, a acetylcholine esterase (AChE) inhibitor used in the treatment of Alzheimer's disease were selected as a drugs. A major limitation of Curcumin is poor solubility related poor bioavailability. This was overcomed through intelligent selection of Microemulsion as a drug delivery system. Microemulsions of Curcumin comprising DHA oil, N-oil and their combination were first prepared and optimized by DOE for Curcumin loading and globule size. Microemulsions with globule size less than 50 nm, zeta potential -5 to -25 mV and good stability as per ICH guidelines were optimized. All

the Curcumin microemulsions showed rapid and significant permeation ($P<0.05$) compared to Curcumin solution and BioCurcumax®. Followed oral administration revealed enhanced brain uptake of Curcumin in zebrafish model. Among the microemulsions higher uptake although not significant was seen with the combination i.e. DHA-N-Oil ME. Donepezil could be readily incorporated in all the three microemulsions. Good stability as per ICH guidelines was also obtained. The microemulsion comprising DHA oil and Novel oil can be promising delivery system for enhanced uptake of drug to the brain by oral route.

Student: Ms. Nikita Lakundi

Supervisior: Prof. K. S. Laddha

SEPARATION OF PHOSPHATIDYLCHOLINE FROM SOY-LECITHIN

Phosphatidylcholine is no longer just an adjuvant in Nano-formulations and lipid based formulations but has been reported to show activity in Dementia and other neurological disorders. Its processing technology has been under observation since long but it includes expensive methods which use HPLC columns etc. maximizes difficulties in Industrial scale-up. This is due to increase in the production costs. Although new methods have been developed all they do is increase the processing cost. Solvent extraction or fractionation is more applicable at commercial basis because of the effective recovery of volatile solvents which can be reused. Existing solvent extraction methods although give highly pure PC, they use solvents like Acetonitrile and hence cannot be used in food or Pharma industry unless these are cautiously eliminated. This project has been devised keeping in mind the ever-increasing demand of Phosphatidyl Choline of varying purities. We have succeeded in obtaining Phosphatidyl choline of approximate 50% purity by optimizing stirring time and solvent to solid ratio. Further purification was also attempted using solvent Partitioning which succeeded in increasing purity by approximate 8-10%. Classification: Natural Products, Isolation, Separation

Keywords*: Lecithin, Phosphotidylcholine, purification*

Student: Mr. Vilas Jagtap

Supervisior: Prof. K. S. Laddha

PHYTOCHEMICAL INVESTIGATION ON BACOPA MONNIERI

Natural products for treatment of various diseases hold interest due to fewer side effects. Use of Bacopa monnieriin treatment of cardiovascular diseases, cancer, neurodegenerative diseases and diabetes is well established and more studies are being carried for newer activities. Studies have shown that bacoside A, B and bacopaside I play a major role in various activities of B. monnieri,so there is a need for these isolated compounds for standardization purpose as marker, pharmacological analysis, for dose determination and for preparation of chemical derivatives. The objective of the research work considering these factors is thus focused on the use of a convenient method for extraction and isolation followed by characterization of the major triterpenoid saponin bacopaside I from B. monnieri. The extraction was done from the dried powder of the herb using methanol and water in batch scale extractor. Extract was collected and dried. The dried mass was partitioned between n-butanol and water. The n-butanol layer was evaporated to obtain thick paste. The thick paste was refluxed using ethyl acetate. Ethyl acetate insoluble material obtained was used to prepare silica bed and loaded on column for isolation of bacopaside I. At chloroform: methanol (85:15) ratio, bacopaside I was isolated. Identification and characterization of compound was done using thin layer chromatography, mass spectrometry, H1NMR, UV, Infra-red spectroscopic technique. This gave isolated biomarker bacopaside I.

Keywords: *Bacopa monnieri, Scrophulariaceae, bacopaside I, Saponins, Nervine tonic, Solvent extraction.*

Student: Mr. Lalit Bhatia

Supervisor: Prof. Vadana B. Patravale

NOVEL RECTAL FORMULATION OF MESALAMINE FOR ULCERATIVE COLITIS

Ulcerative colitis is a chronic inflammatory bowel disease, which is characterized by continuous mucosal inflammation with alternate

periods of relapse, and remission, causing many typical clinical symptoms such as abdominal pain, diarrhoea, urgency, tenesmus and rectal bleeding. The mesalamine formulation which is available in market are administered in high dose (0.5g/2-3 times a day) due to low drug bioavailability, due to which it causes more side effects like diarrhoea, skin irritation, nausea vomiting and stomach pain. This work mainly focuses on development novel of rectal formulation i.e. suppository for the treatment of ulcerative colitis. The particle size of mesalamine was significantly reduced by planetary ball to achieve greater surface area and hence higher therapeutic action. Three suppository formulations having different dose of mesalamine were prepared i.e., 100 mg, 250 mg and 500 mg by pour mould method and tested for quality control parameters. For the pharmacodynamics evaluation of the developed suppositories, firstly, validation of acetic acid induced colitis was done followed by administration of the developed and marketed formulations to the animals 3 times a day for a period of 7 days. The healing of ulcerative colitis was evaluated by morphological analysis and histopathological analysis of the colons from the animals. It was found that developed formulation containing 100 mg of micronized mesalamine was as effective as marketed suppository containing 500 mg of mesalamine. Thus, five times dose reduction was achieved by particle size reduction of mesalamine for the treatment of ulcerative colitis.

Student: Ms. Soumya M K
Supervisor: Prof. Vandana B. Patravale

ORAL ARTEMETHER-CLINDAMYCIN COMBINATION FOR IMPROVED ANTI-MALARIAL THERAPEUTICS

The focus of the current investigation was to develop stable Nanostructured Lipid Carriers (NLCs) for oral delivery of Artemether (ARM) and Clindamycin phosphate (CP) that have been reported to exhibit potent anti-malarial activity when administered intravenously. Even 20% of therapeutic dose of this combination have shown excellent anti-malarial activity in mice. NLCs were developed in order to overcome the low aqueous solubility and bioavailability of ARM and also to provide a sustained release of drugs. Developed ARM-CP NLCs were characterized for its particle size, polydispersity index (PDI), zeta potential, drug content, entrapment efficiency and in vitro release studies. Simultaneously conventional ARM-CP immediate release (IR) tablets were also developed and evaluated for all pharmacopoeial and non pharmacopoeial parameters including appearance, dimensions, hardness, uniformity of weight, friability, disintegration and dissolution studies. Anti-malarial activity of ARM-CP NLCs and ARM-CP IR tablets after oral administration were also explored. ARM-CP NLCs results in dose reduction by 2.5 times.

Student: Mr. Shaikh Afroj Abdulgani
Supervisor: Prof. Sadhana Sathaye

EVALUATION OF THYMOQUINONE ON STREPTOZOTOCIN INDUCED COMPLICATIONS OF DIABETES MELLITUS

Background: Oxidative stress is a major culprit in development of diabetic complications. Thymoquinone, a component of Nigella sativa, possess anti-oxidant activity. The aim and objective of present study was to evaluate the effect of Thymoquinone in diabetic complications (nephropathy & retinopathy) in Streptozotocin induced diabetes in rats.

Methodology: Diabetes was induced in rats by single intraperitoneal injection of Streptozotocin (45 mg/kg). Blood glucose was determined after 72 hrs; rats having blood glucose >250mg/dl were considered diabetic and included in the study. Diabetic rats were kept for 3 weeks without treatment for induction of diabetic complications. Treatment with Thymoquinione (1.25 mg/kg, 2.5 mg/kg & 5 mg/kg i.p.) was started from 4th week and was continued till 9th week. At the end of study blood glucose & lipid profile were determined. Kidney and eye were subjected to histopathological analysis and tissue homogenates were used for evaluation of oxidative stress parameters such as superoxide dismutase, catalase,

reduced glutathione and lipid peroxidation.

Result: Blood glucose level was significantly decreased by Thymoquinone treatment at dose of 1.25 & 2.5mg/kg. Triglyceride and total cholesterol significantly decreases by Thymoquinone treatment at dose of 1.25 & 2.5mg/kg, whereas HDL-Cholesterol significantly increases by Thymoquinone treatment at dose of 1.25 & 2.5 & 5 mg/kg. Thymoquinone dose dependently ameliorated oxidative stress in eye tissue homogenate which was also confirmed by histopathology.

Student: Mr. Datta Sirsat

Supervisor: Prof. Sadhana Sathaye

IN-VITRO EVALUATION OF VARIOUS PHYTOCONSTITUENT'S IN MITOCHONDRIAL DYSFUNCTION.

Alzheimer's disease (AD) is a progressive neurodegenerative disorder with a spectrum of memory, learning and behavioural and motor abnormality. Oxidative stress and mitochondrial dysfunction are the major hallmarks observed in AD pathology. Current therapeutic approaches show less therapeutic effect and have their own sets of side effects. Therefore, present therapy aims to provide neuroprotection effects. In the present study we have evaluated Cytochrome C oxidase (Complex IV) enzyme activity by using sodium azide as standard inhibitor in isolated rat brain tissues. In the present study we have developed an in-vitro assay to screen potential molecules for their Alzheimers activity using Complex IV activity. In therapeutics this study, we aim to investigate complex IV enzyme activity of naturally occurring flavanoids like Quercetin, Psoralen and Naringenin by sodium azide induced mitochondrial dysfunction. Our objective is to study neuroprotective effect of the phytoconstituents with best results in complex IV enzyme assay. Quercetin showed better results out of the three in enzyme assay. Hence quercetin was chosen to evaluate its neuroprotective effect in hydrogen peroxide (H2O2) induced toxicity in SH-SY5Y cells. Range of concentration of queretin from 10nM-10µM were used to check neuroprotective activity by antioxidant and mitochondrial membrane potential assay.

With above objective the three chosen phytoconstituents were evaluated for their complex IV enzyme activity by In-vitro enzyme assay.. quercetin showed promising results by restoring complex IV enzyme activity in presence of sodium azide. To further substantiate our data we carried out various assays using SH-SY5Y cells line to investigate the neuroprotective action of quercetin. In conclusion, by virtue of in-vitro and cell based assays quercetin possesses neuroprotective activity in neurodegenerative diseases like Alzheimer's.

Student: Mr. Aditya Mali

Supervisor: Prof. Sadhana Sathaye

FORMULATION ANDEVALUATION OF ANTI CATARACT ACTIVITY OF ETHYL ACETATE FRACTION OF SARACA INDICA

Cataract is a clouding or opaque area over the transparent lens of the eye, which is caused when some of the proteins in the lens begin to aggregate, and finally interferes with vision. As per the previous study Saraca indica found to be effective both in vitro as well as in vivo in lowering the reactive oxidative species and oxidative stress, thereby prolonging cataract formation. Also aldose reductase inhibitory potential of Saraca indica was evident. Present study was undertaken to develop topical delivery eye formulation, to save precious drug extract and to prolong the time between detection of cataract and lens surgery. Formulation base found to be non irritant and can be used for further development of the product. Formulation found to be complying with compendial standards. In vivo results were not as par with previous study expectations.

Student: Mr. Mayur Patil
Supervisior: Prof. P. R. Vavia

FORMULATION AND EVALUATION OF BILAYERSYSTEM FOR ELETRIPTAN HYDROBROMIDE

Migraine is aheadache disordercharacterized byunilateral, pulsatingheadache occursrecurrently for 4-48 hours. Eletriptan hydrobromide (ELT), 5HT 1B/1D agonist, is used in thetreatment of moderate

to severe migraine. Marketed product (Relpax) is available in the form ofimmediate release formulation. Problem of high recurrences (more than 40%) is reported withRelpax. Recurrences are due to inability of marketed formulation to achieve therapeuticconcentration at serotonergic receptors. Along with this, low therapeutic window and multipledosing side effects are challenges associated with marketed system. So there was a need of a safeand effective formulation Eletriptan Hydrobromide. In order to treat acute headache as well as toavoid recurrences, bilayer tablet system was formulated for ELT. The primary objective of thework was to develop stable bilayer tablet system with a help of quality by design approach. Theformulation was optimized using central composite design, taking into consideration the variousproduct and process variables. The effect of product variables on disintegration time and drugrelease was studied. The disintegration time and f2 value of the optimized formulation werefound to be 24 ± 3 Seconds and 72.42 respectively. Thus the developed product is efficientalternative for reduction of recurrences with good patient compliance.

Student: Mr. Yash Nakhva
Supervisior: Prof. P. R. Vavia

FORMULATION AND EVALUATION OF MODIFIED DRUG DELIVERY SYSTEM FOR DARIFENACIN HYDROBROMIDE

Over Active Bladder syndrome (OAB) is one of the major disorder which affects the quality oflife of many people. Darifenacin hydrobromide (DBR) is a third generation M3 receptor blocker,which is used as an effective treatment for OAB due to its advantages over other antimuscarinicagents. It has higher absorption from the colonic region. The aim of this study is to develop a colontargeted delivery system for DBR which has higher bioavailability and less biovariability. Theformulation was made in to two parts: extended release (ER) matrix tablet and colon specificdelayed release (DR) tablet. Hydroxy propyl methyl cellulose (HPMC) was used for extendedrelease part and Eudragit S100 was used as pH dependent coating polymer for colon targeteddelivery. The formulation was optimized using Response Surface Methodology Central CompositeDesign. Three important factors selected were HPMC concentration, Eudragit S100 concentrationand coating amount. Three responses selected were amount of drug release after 4 hours, 8 hoursand 12 hours. The optimized formulation has HPMC concentration 50 mg, Eudragit S100concentration 10% w/w and coating amount 15% w/w. These two different ER and DR tabletswere filled into a hard gelatine capsule shell and sealed with cap. The final tablet-in-capsuleformulation has higher bioavailability, less toxicity and reduced biovariance

M. TECH.

Student: Mr. Somnath Patil
Supervisor: Prof. Sadhana Sathaye

ENZYMATIC EXTRACTION OF PSORALEN FROM PSORALEA CORYLIFOLIA L.

Psoralen is a furocoumarin which shows various pharmacological activities such as antioxidant activity, Anticancer activity, photosensitizing activity etc. Because of its many pharmacological activities it has potential application in drug industry. The current work has dealt with enzyme assisted extraction of psoralen using pectinase and lipase enzyme to improve yield. Optimization of various extraction parameters such as extraction time, extraction temperature and enzyme concentration has been performed. Different extraction methods like maceration and Soxhlet extraction has been compared with enzyme assisted extraction. Pectinase and lipase enzymes found to offer better performance in the extraction. This is the first report in which enzymatic extraction of psoralen has been done. The extraction yield turned out to be 8.64mg/g in case of maceration, 11.03mg/g in case of Soxhlet. Preoptimized condition using enzyme gave 12.30mg/g yield. Enzymatic extraction showed highest yield at 45°C for 3 hours using 6 % of enzyme concentration. Optimization of extraction parameters was done by using response surface methodology (RSM), analysis was done using TLC and HPLC. Purification was done using preparative column chromatography. NMR was done for conformation of structure of psoralen. Enzymatic

extraction showed better yield as compare to maceration and Soxhlet extraction in less time.

Student : Ms. SonaliAgarkar

Supervisior: Professor P. D. Amin

FORMULATION AND DEVELOPMENT OF SUSTAINED RELEASED GLICLAZIDE TABLETS WITH THE DIFFERENT HYDROPHILIC POLYMER BY USING DIRECT COMPRESSION TECHNIQUE

Purpose of this research work was to prepare sustained released tablets of Gliclazide by using different grades of hydrophilic polymers for direct compression technique. HPC GF GRADE, HPMC K4M, and PARTECK® SRP 80 were used as the polymer, Avicel pH 101 (MCC) was used as highly compressible diluent and Starch 1500 was used as insoluble tablet filler. Aerosil 300 and Magnesium stearate was used as Glidant and lubricant for improving the flow property of powder and to decrease the friction between die wall and punches. Blend of the powder was evaluated for angle of repose, bulk density, tapped density, compressibility and Hausner's ratio. Tablets were prepared on rotary tablet press machine (Eliza press) and evaluated for weight variation, thickness, hardness, friability, drug content, in-vitro drug release. The physicochemical properties of blends were estimated by using Fourier transform infrared spectroscopy (FTIR), X-ray diffraction (XRD), and differential scanning calorimetry (DSC). High-performance liquid chromatography (HPLC) method for analysis was developed. Accelerated stability study was also performed for on the optimized formulation for three months and was found to be was stable.

Student: Mr. Sagar Chandane

Supervisior: Professor P. D. Amin

FORMULATION AND DEVELOPMENT OF VAGINAL INSERTS BY USING HOTMELT EXTRUSION (HME) AND EVALUATION OF POLYVINYLPYRROLIDONE (PVP K30) FROM DIFFERENT MANUFACTURERS

Part A

The aim of this work was to develop a vaginal insert using Hot Melt Extrusion(HME) containing the antifungal clotrimazole for the treatment of vaginal candidiasis, vaginal inserts containing strain Lactobacillus acidophilus for the prophylaxis and therapy of vaginal infections. Vaginal inserts based on polymers such as Hydroxypropylcellulose (HPC-EF& ELF), Maltodextrin, Eudragit-EPO, lactose-monohydrates were prepared by HME technology and the developed vaginal inserts were evaluated in terms of assay and drug content, in-vitro drug release scanning electron microscopy, antifungal activity, and skin irritancy.

The extruded clotrimazole inserts demonstrated excellent content uniformity and a post processing drug content of 107.60%. Similarly, the extruded vaginal inserts containing lactobacillus acidophilus showed complete survival of the bacteria (80.24%).The inserts were determined to exhibit desirable and consistent release properties. The results of this study indicate that HME is a viable technique for the preparation of vaginal insert containing clotrimazole and probiotics for vaginal infections.

Part B

The USP 32 describes polyvinylpyrrolidone as a synthetic polymer consisting essentially of linear 1-vinyl-2-pyrrolidinone groups. It is characterized by its viscosity in aqueous solution, relative to that of water, expressed as a K-value, in the range 10–120.

The present study is comparative evaluation PVP-K30 from different manufacturers for their different physiochemical properties. Variation in these properties affects formulation stability and performance. PVP-K30 from all manufacturers were analysed for solubility, pH, density, flowability, moisture content , contact angle, particle size distribution, FTIR-analysis, X-ray diffraction, thermal analysis, viscosity, K-value, peroxide content, description of packaging and scanning electron microscopy. It was observed that for PVP-K30 many of these parameters differs for different manufacturers.

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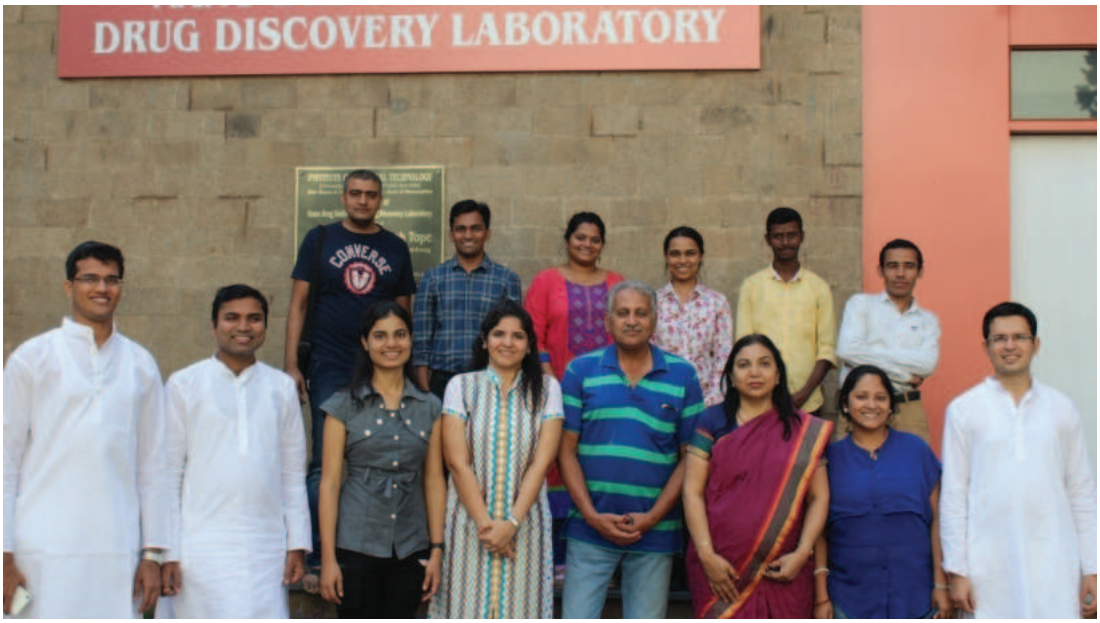

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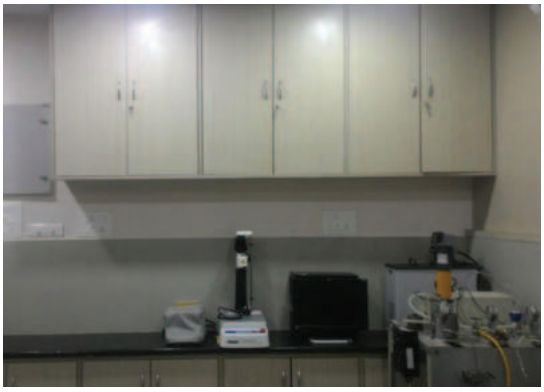


Probe Sonicator
Texture Analyzer
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Sifter
Dissolution Test Apparatus
Disintegration Tester
Friability Tester
Peristaltic Pump


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Ultra Turrax
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Gel Electrophoresis
RotaVac
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Freeze dryer
Inline Homogenizer
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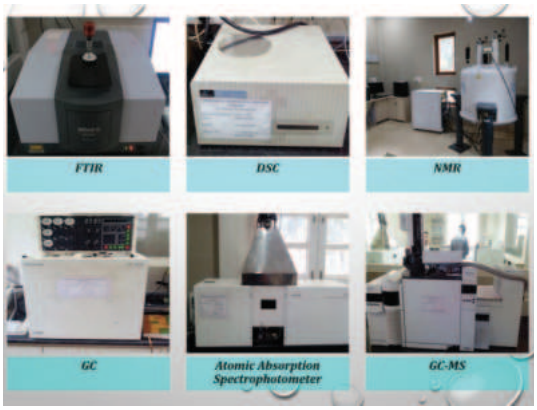
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NMR
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Atomic Absorption Spectrophotometer
GC-MS

DIAMOND JUBILEE CELEBRATIONS ON 7th APRIL, 2018 PHOTOGRAPHS


Diamond Jubilee