



Annual report of the Department of Pharmaceutical Chemistry

AY July 2016- June 2017

Department of Pharmaceutical Chemistry Faculty

Dr. Tabassum Khan, Ms. Vasanti Suvarna, Dr. Atul Sherje, Dr. Kavithkumar Patel, Dr. Dr. Bhushan Dravyakar and Vinodkumar Gupta (odd semester only).

This report summarizes the various activities of the Dept. of Pharmaceutical Chemistry for the Academic Year 2016-17.

1. Academic activity

- The faculty was involved in taking lectures and laboratory sessions as per their workload and timetable for the AY 2016-17.
- The faculty conducted focus group sessions with the slow learners and diploma students in the subjects of organic chemistry and pharmaceutical chemistry. They conducted tutorials, quiz and assignments to gauge the student understanding of the coursework.
- Student mentorship and career guidance activities were conducted on a need basis for the UG and PG students.
- The faculty actively conducted various examination related activities viz. University of Mumbai paper setting, paper correction, paper moderation, paper revaluation. Some were also involved in paper correction, paper moderation and paper revaluation for SSP-SPTM, NMIMS deemed to be University and C.U. Shah college of pharmacy, SNTD Women's University.

2. Extra-academic/ Extra-curricular activity

- The dept. faculty is an integral part of many college committees. As a part of these committees they participated in committee meetings, resolved issues, maintained documentation and reports of the same.
- They were actively involved in NBA activities including compilation of NBA files and preparation of supporting documents, collection and collation of data on various courses. The faculty actively participated in the two day NBA audit, Dec 1-11, 2016
- The faculty played an active role in organization of various events like seminars, conferences and workshops.

Faculty	Name of the event	Responsibility	Dates
Dr. Tabassum Khan	University of Mumbai syllabus discussion committee meetings for choice based system in the subjects of organic chemistry and pharmaceutical analysis.	Committee member	May 2017
	Guest talk on "NBA Accreditation process- an overview"	Resource person	Jan 19, 2017 Kalsekar pharmacy college, New Panvel.



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	Drug Development and Diagnostic Approaches for Tuberculosis	LOC member	July 29-30 2016 at BNCP
	Chromatography and Mass spectrometry	Coordinator	October 01, 2016 at BNCP
Ms. Vasanti Suvarna	HPLC training to industry (Ardmore Therapeutics) on basic concepts of HPLC, HPLC system operation, HPLC method development and method validation.	Trainer	May 2017 (1 week)
	Drug Development and Diagnostic Approaches for Tuberculosis	LOC member	July 29-30 2016 at BNCP
Dr. Atul Sherje	HPLC training to industry (Ardmore Therapeutics) on basic concepts of HPLC, HPLC system operation, HPLC method development and method validation.	Trainer	May 2017 (1 week)
	Chromatography and Mass spectrometry	Co-coordinator	October 01, 2016 at BNCP
	Drug Development and Diagnostic Approaches for Tuberculosis	LOC member	July 29-30 2016 at BNCP
Dr. Kavikumar Patel	Drug Development and Diagnostic Approaches for Tuberculosis	LOC member	July 29-30 2016 at BNCP
Dr. Bhushan Dravyakar	Drug Development and Diagnostic Approaches for Tuberculosis	LOC member	July 29-30 2016 at BNCP

**3. Research activity**

The department faculty is actively involved in research activities including publications and research proposal submissions.

Publications/Patents/Books/Book chapters

Faculty	Title of the paper/ Name of the journal/ Publication date/ Impact factor
Dr. Tabassum Khan	<ol style="list-style-type: none"> 1. Published a paper titled "Analytical method development and validation studies of ticagrelor tablets by RP-HPLC" in International Journal of Applied Pharmaceutics, 9(04), 2017, p 10-21. 2. Published a paper titled "Analytical method development and validation studies for the estimation of aspirin, clopidogrel bisulphate and rosuvastatin calcium in fixed dose combination capsule by UV spectroscopy" in Indian Drugs, 54(06), 2017, p 43-47. 3. Published a paper titled "Standardization of marketed Ayurvedic formulation, Balaguloochyadi kashayam- physicochemical, microbial evaluation and ephedrine content" in Journal of Applied Pharmaceutical Science, Vol. 6 (12), p 184-189, December, 2016 , DOI: 10.7324/JAPS.2016.601226; ISSN 2231-3354. 4. Published a paper titled "Anti-osteoarthritic activity of <i>Acacia nilotica</i> pods in Wistar rats"; Journal of Laboratory Animal Science Vol 4 Issue 1, August 2016, p 1-11. 5. Published a paper titled "Novel Therapeutic Targets for Management of Type-2 Diabetes Mellitus"; Immunology, Endocrine & Metabolic Agents in Medicinal Chemistry 16(1), 2016, p 18-30. DOI: 10.2174/1871522216666160216225721. 6. Published a paper titled "Standardization and HPTLC method development of marketed ayurvedic formulation-Balarishta"; Int J Pharm Pharm Sci 8(3), 2016, p 201-9. <p>Book "Analysis of marketed Ayurvedic formulation-Balarishta", Publisher-Scholars Press, Omni Scriptum GmbH &Co, ISBN: 978-3-330-65018-3, April 2017.</p>
Ms. Vasanti Suvarna	<ol style="list-style-type: none"> 1. Published a research paper titled 'Inclusion complexes of Nateglinide with HP-β-CD and L-arginine for solubility and dissolution enhancement: Preparation, characterization and molecular docking study' Journal of Pharmaceutical innovation. Impact factor 1.603, (Springer publications). 2. Published a review paper titled, "Complexation of Phytochemicals with Cyclodextrin derivatives – An Insight" in Biomedicine & Pharmacotherapy, Biomed Pharmacother. 2017 Feb 12; 88:1122-1144, IF- 2.326. 3. Published a research paper titled "Inclusion Complexation of Etodolac with Hydroxypropyl-beta-cyclodextrin and auxiliary agents: Formulation characterization and Molecular modeling studies, in



	<p>Molecular Pharmaceutics, IF 4.34, (available online March 01, 2017).</p> <p>4. Published a review paper titled “Liposomes containing phytochemicals for cancer treatment- an update” Int J Curr Pharm Res, 2017, Vol 9, Issue 1, 20-24.</p> <p>Patent A provisional patent application titled “Solid lipid nanoparticles containing Darunavir and Piperine” for improved bioavailability of Darunavir was submitted in Jan 2017.</p>
Dr. Atul Sherje	<p>1. Published a review paper titled “Cyclodextrin-based nanosponges: A critical review” in Carbohydrate Polymers (2017) 173:37–49. (Impact factor- 4.881).</p> <p>2. Published a research paper titled 'Inclusion complexes of Nateglinide with HP-β-CD and L-arginine for solubility and dissolution enhancement: Preparation, characterization and molecular docking study' Journal of Pharmaceutical innovation. Impact factor 1.603, (Springer publications).</p> <p>3. Published a research paper titled “Inclusion Complexation of Etodolac with Hydroxypropyl-beta-cyclodextrin and auxiliary agents: Formulation characterization and Molecular modeling studies, in Molecular Pharmaceutics, IF 4.34, (available online March 01, 2017).</p>
Dr. Bhushan Dravyakar	<p>1. Published a review paper titled “Cyclodextrin-based nanosponges: A critical review” in Carbohydrate Polymers (2017) 173:37–49. (Impact factor- 4.881).</p> <p>2. Published a research paper titled “Inclusion Complexation of Etodolac with Hydroxypropyl-beta-cyclodextrin and auxiliary agents: Formulation characterization and Molecular modeling studies, in Molecular Pharmaceutics, IF 4.34, (available online March 01, 2017).</p>



Research projects submitted/sanctioned

Faculty	Title of the project	Name of the funding agency/PI/CI	Submission date/Outcome
Dr. Tabassum Khan	1. "In-silico drug design, synthesis and pharmacological evaluation of Balicatib analogs as modulators of Cathepsin K inhibitors for the treatment of osteoporosis"- (Rs.27,00,000)	DST-SERB/CI	July 28, 2017
	2. "Synthesis, development and efficacy studies of chlorotoxin functionalized hollow gold nanoparticles for therapy of glioblastoma"- Rs. 2456800.	DST-SERB/CI	July 28, 2017
	3. DST-FIST 2017 program (Financial assistance requested – Rs. 1,06,84,010) for improvement of Science and Technology infrastructure in higher educational institution- PG college Level 0	DST/ PI	Jan 20, 2017 Under review
	4. Neuroconference grant	DST SERB, ICMR and CSIR	Sanctioned Rs 1,80,000/-
	5. "Fortified Nutraceuticals of <i>Acacia nilotica</i> pods, - A healthy product for geriatric patients"- Rs. 16,00,000.	RGSTC/PI	Preproposal accepted
	6. "Development of Nanoemulgel for arthritic inflammation and pain based on ethnomedicinal plants of western India"- Rs. 17,00,000.	RGSTC/CI	Preproposal accepted



	7. Drug proving studies, mechanistic insight and development of novel drug delivery systems of some medicinal plants used in the treatment of arthritis in the Unani system of medicine	CCRUM-EOI	Presented this project on May 22, 2017 before the SAC, revised project submitted
	8. Development of mucoadhesive intestinal patches and its in-vitro dissolution studies, 5,98,000	EFFORT GRANT/CI	March 03, 2017 Under review
	9. MODROBS and Neuroconference grant application under the AICTE AQIS scheme.	AICTE/PI	10-01-2017 Result awaited
	10. Synthesis of impurities of some drugs (Active pharmaceutical ingredients) to be used as reference standards.	University of Mumbai/PI/	Sanctioned Rs. 30,000/-
	11. Characterization and evaluation of theranostic silver nanoparticles stabilized with folic acid nano conjugates of chitosan for colorectal cancer.	DST-SERB/CI	20-10-2015/ Shorlisted in stage 1, declined subsequently
Ms. Vasanti Suvarna	1. "Ligand-conjugated Ultrathin Polyelectrolyte Capsules for Targeted Drug Delivery via Pulmonary route in the treatment of Visceral Leishmaniasis- Rs.42,20,000)	DST-SERB/CI	31-07-2017
	2. Solubility Enhancement of Telmisartan using Cyclodextrin: Molecular Docking, in vitro and in vivo characterization"- Rs. 37,40,000/-	DST-SERB/CI	31-12-2016 Declined Sanctioned



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	3. Solubility enhancement of poorly water soluble drug Irbesartan using cyclodextrin inclusion complexation technique.	University of Mumbai/PI/	Rs. 20,000/-
Dr. Atul Sherje	Solubility Enhancement of Telmisartan using Cyclodextrin: Molecular Docking, in vitro and in vivo characterization"- Rs. 37,40,000/-.	DST-SERB/PI	31-12-2016 Declined
Dr. Kavatkumar Patel	1. "In-silico drug design, synthesis and pharmacological evaluation of Balicatib analogs as modulators of Cathepsin K inhibitors for the treatment of osteoporosis"- (Rs.27,00,000)	DST-SERB/PI	July 28, 2017
	2. Molecular docking and molecular hybridization based combined approach for synthesis of N'-[3-phenylprop-2-enoyl]-1H-pyrazole-4-carbohydrazide as anticancer agents.	DST-SERB/PI/ 26,00,000/-	31-12-2016 Shorlisted in stage 1, declined subsequently
	3. Molecular hybridization approach for synthesis of N'-[3-phenylprop-2-enoyl]-1Hpyrazole-4-carbohydrazide as anticancer agents.	University of Mumbai/PI/Rs. 1,10,00/-	Sanctioned Rs. 30,000/-
Dr. Bhushan Dravyakar	1. Design, Synthesis and Pharmacological characterization of new quinazolines as selective alpha glucokinase activators – A promising approach in treatment of NIDDM	DST-SERB/PI	31-10-2016 Declined
	2. Design and synthesis of some new quinazolines as antihypertensive agent	University of Mumbai/PI/Rs. 65,000/-	Sanctioned Rs. 25,000/-

**Conferences/Seminars/Workshops/FDP**

Faculty	Name of the event	Attended/Presented	Dates
FDP			
Dr. Tabassum Khan	One week ISTE sponsored faculty development workshop titled, "Applications and impact of novel tools in research".	Attended	March 06-10, 2017 at SPP-SPTM, Mumbai.
	One week ISTE sponsored faculty development workshop titled, "Current Trends in Pharmacy and Research".	Attended	September 14-20, 2016 at BNCP, Mumbai
Ms. Vasanti Suvarna	Current Trends in Pharmacy and Research" Workshop	Attended	September 14-20, 2016 at BNCP, Mumbai
Dr. Atul Sherje	Current Trends in Pharmacy and Research" Workshop	Attended	September 14-20, 2016 at BNCP, Mumbai
	Application of advanced analytical tools and technology in pharma sciences	Attended	August 26-31, 2016 at SSPSPTM, Mumbai
Dr. Kavatkumar Patel	Current Trends in Pharmacy and Research" Workshop	Attended	September 14-20, 2016 at BNCP, Mumbai
Dr. Bhushan Dravyakar	Current Trends in Pharmacy and Research" Workshop	Attended	September 14-20, 2016 at BNCP, Mumbai
Dr. Vinodkumar Gupta	Current Trends in Pharmacy and Research" Workshop	Attended	September 14-20, 2016 at BNCP, Mumbai



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Seminars			
Dr. Tabassum Khan	Drug Development and Diagnostic Approaches for Tuberculosis	Attended	July 29-30 2016 at BNCP, Mumbai
	Chromatography and Mass spectrometry	Attended	October 01, 2016 at BNCP, Mumbai
Ms. Vasanti Suvarna	Drug Development and Diagnostic Approaches for Tuberculosis	Attended	July 29-30 2016 at BNCP, Mumbai
	Chromatography and Mass spectrometry	Attended	October 01, 2016 at BNCP, Mumbai
Dr. Atul Sherje	Drug Development and Diagnostic Approaches for Tuberculosis	Attended	July 29-30 2016 at BNCP, Mumbai
	Chromatography and Mass spectrometry	Attended	October 01, 2016 at BNCP, Mumbai
Dr. Kavalkumar Patel	Drug Development and Diagnostic Approaches for Tuberculosis	Attended	July 29-30 2016 at BNCP, Mumbai
Dr. Bhushan Dravyakar	Drug Development and Diagnostic Approaches for Tuberculosis	Attended	July 29-30 2016 at BNCP, Mumbai
Dr. Vinodkumar Gupta	Drug Development and Diagnostic Approaches for Tuberculosis.	Attended	July 29-30 2016 at BNCP, Mumbai
	Chromatography and Mass spectrometry	Attended	October 01, 2016 at



	API synthesis- from lead optimization to patent	Attended	BNCP, Mumbai Dec 17, 2016 at CHM Campus, Mumbai
Conferences			
Dr. Tabassum Khan	International Conference on Drug Discovery	Presented 3 papers (1 oral and 2 posters)	Nov 24-26, 2016, Bangalore
Ms. Vasanti Suvarna	International conference on Artificial Intelligence in health care.	Attended	Dec 27-28 2016 at Shirpur.
Dr. Atul Sherje	International conference on Artificial Intelligence in health care.	Attended	Dec 27-28 2016 at Shirpur.
Dr. Kavatkumar Patel	International conference on Artificial Intelligence in health care.	Attended	Dec 27-28 2016 at Shirpur.
Dr. Bhushan Dravyakar	International conference on Artificial Intelligence in health care.	Attended	Dec 27-28 2016 at Shirpur.
Dr. Vinodkumar Gupta	International conference on Artificial Intelligence in health care.	Attended	Dec 27-28 2016 at Shirpur.
Workshops			
Dr. Tabassum Khan	One day workshop on AYUSH-EMR scheme organized by Ministry of AYUSH.	Attended	Jan 16, 2017, Mumbai
	CADD workshop for PG research students and faculty	Attended	BNCP Mumbai
	Hands-on workshop on Basics of LC-MS/MS	Attended	Aug 22-24, 2016 at SSPSPTM, Mumbai



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Ms. Vasanti Suvarna	CADD workshop for PG research students and faculty	Attended	BNCP Mumbai
Dr. Atul Sherje	SAP training	Attended	March 23-25, 2017, SVKM, Mumbai
	CADD workshop for PG research students and faculty	Attended	BNCP Mumbai
Dr. Kavalkumar Patel	SAP training	Attended	March 23-25, 2017, SVKM, Mumbai
	Research guidance for beginners	Attended	Oct 01, 2016 at MVM college, Mumbai
	CADD workshop for PG research students and faculty	Resource person	BNCP Mumbai
Dr. Bhushan Dravyakar	SAP training	Attended	March 23-25, 2017, SVKM, Mumbai
	One day workshop on NBA titled, "Let's Do NBA".	Attended	VES college of pharmacy, Mumbai on Feb 16, 2017.
	CADD workshop for PG research students and faculty	Attended	BNCP Mumbai
	Research guidance for beginners.	Attended	Oct 01, 2016 at MVM college, Mumbai
Dr. Vinodkumar Gupta	CADD workshop for PG research students and faculty	Attended	BNCP Mumbai



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Faculty appraisal

Faculty	Total API (AY 2016-17)	API breakup I+II+III	Appraisal date
Dr. Tabassum Khan	395.5	170+34+191.5	May 2017
Ms. Vasanti Suvarna	321.5	158+38+125.5	May 2017
Dr. Atul Sherje	306.5	168+50+88.5	May 2017
Dr. Kavatkumar Patel	152	104+28+20	May 2017
Dr. Bhushan Dravyakar	268	180+48+40	May 2017

SVKM Management support-Faculty welfare/appreciation

Faculty	Conference/ Workshop/Seminar support (Rs)	Loyalty benefit (Rs) wef from Feb 2017	Research/ Publication incentive (Rs)
Dr. Tabassum Khan	10,000 (WS)	5000	-
Ms. Vasanti Suvarna	7924+3000=10,924	5000	7143+8333= 15476
Dr. Atul Sherje	3000+2000=5000	5000	7143
Dr. Kavatkumar Patel	3000	NA	-
Dr. Bhushan Dravyakar	3000+2000=5000	NA	7143

Research activity summary

Research head	Number
Research projects sanctioned	03 (Rs 1,05,000) University of Mumbai
Research projects submitted	16
Publications	11
Total impact factor of dept. faculty	13.15
Books/book chapters	01
Patent (provisional)	01

Prepared by

Dr. Tabassum Khan

August 14, 2017



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