



Annual report of the Department of Pharmaceutical Chemistry & Quality Assurance

AY July 2018- June 2019

Department of Pharmaceutical Chemistry Faculty

Dr. Tabassum Khan, Dr. Arati Prabhu, Dr. Vasanti Suvarna, Dr. Atul Sherje, Dr. Kavatkumar Patel, Dr. Radhika Raheja and Mr. Mihir Khambete (even semester only).

This report summarizes the various activities of the Dept. of Pharmaceutical Chemistry & QA for the academic Year 2018-19.

Awards

- Ms. Vasanti Suvarna was awarded PhD degree in Pharmaceutical Sciences, SSPSPTM, NMIMS University for her research work titled, "Evaluation and influence of bioenhancers on antiretroviral drugs".
- Dr. Tabassum Khan was awarded the best teacher award for overall best performance in academics and research for the academic year 2018-19 at the BNCP annual day function, February 26, 2019.
- Dr. Arati Prabhu was awarded the best research proposal award at the research grant writing competition in the Faculty category at the BNCP annual day function, February 26, 2019.
- Dr. Tabassum Khan was awarded the SHASTRI-SMP award. She visited Dr. Abdelwahab Omri, Full Professor, Dept. of Biochemistry, Laurentian University, Sudbury, Ontario, Canada on a SHASTRI-SMP Fellowship awarded by SICI, MHRD, Govt. of India (Oct 21- Nov 12, 2018) and Dr. Afsaneh Lavasanifer, Professor, Dept. of Pharm Sciences, University of Alberta, Edmonton, Canada, Nov 12-23, 2018.

1. Academic activity

- The faculty was involved in taking lectures and laboratory sessions as per their workload and timetable for the AY 2018-19.
- The faculty conducted focus group sessions with the slow learners and diploma students in the organic 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 final year lab examination, paper setting, paper correction, paper moderation, paper reevaluation.

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 (AY 2018-19) and preparation of supporting documents, collection and collation of data on various courses.
- The faculty played an active role in organization of various events like seminars, conference and workshops.



- They attended attended training sessions on SAP, Smart Board and Student portal organized by SVKM in September 2018.

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. Selective drug deposition in lungs through pulmonary drug delivery systems for effective management of drug resistant TB, Expert Opinion on Drug Delivery, May 2019, Taylor & Francis; IF=5.553.2. Development of simultaneous spectrophotometric method for quantification of resveratrol and folic acid in an orogel, International Journal of Pharmaceutical Sciences and Research, 2019; Vol. 10(4): 2035-2039; IF= 0.59.3. Polysaccharides as potential anticancer agents—A review of their progress, Carbohydrate Polymers, 210, 2019, 412-428. Elsevier; IF= 5.1584. Analytical Method Development and Validation for Simultaneous Estimation of Curcumin and Cyclosporine by RP-HPLC, International Journal of Pharmacy and Pharmaceutical Sciences, Vol 11, Issue 2, 2019, 26-33.5. Design and Development of Novel 2-(Morpholinyl)-N-substituted Phenylquinazolin-4-amines as Selective COX-II Inhibitors, Anti-Inflammatory & Anti-Allergy Agents in Medicinal Chemistry, 2019, 18, 1-22, Bentham.6. Mycobacterial siderophores: A review on chemistry and biology of siderophore and its potential as a target for tuberculosis, European Journal of Medicinal Chemistry, Volume 157, 5 September 2018, 783-790; Elsevier; IF = 4.816.7. Bone health and natural products-An insight, Frontiers in Pharmacology, 9, 981 September 2018; IF = 3.8.8. Targeting tumor microenvironment to curb chemoresistance via novel drug delivery strategies, Expert Opinion on Drug Delivery, Volume 15, Issue 7, July 2018, p 641-663, Taylor Francis; IF= 5.553.9. Imidazole and Pyrazole: Privileged Scaffolds for Anti-Infective Activity”, in Mini Reviews in Organic Chemistry, 15(6); 459-475, 2018; IF= 0.722. |
| Dr. Arati Prabhu | Molecular dynamic simulations on an inhibitor of anti-apoptotic Bcl-2 proteins for insights into its interaction mechanism for anti-cancer activity, J Biomol Struct Dyn . 1 – 13, 2018; IF=3.107 |
| Dr. Vasanti Suvarna | <ol style="list-style-type: none">1. Design and Development of Novel 2-(Morpholinyl)-N-substituted Phenylquinazolin-4-amines as Selective COX-II Inhibitors, Anti-Inflammatory & Anti-Allergy Agents in Medicinal Chemistry, 2019, 18, 1-22, Bentham. |



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| | <ol style="list-style-type: none">2. Mycobacterial siderophores: A review on chemistry and biology of siderophore and its potential as a target for tuberculosis, European Journal of Medicinal Chemistry, Volume 157, 5 September 2018, 783-790; Elsevier; IF = 4.816.3. Bone health and natural products-An insight, Frontiers in Pharmacology, 9, 981 September 2018; IF = 3.8.4. A review on applications of nanotechnology in cosmetics, Int. Res. J. Pharm., 9 (4), 2018.5. Development and validation of analytical method for estimation of API, International Journal of Pharmaceutical Sciences and Research, Vol. 10(3): 1000-05, 2019; IF= 0.59. <p>Books/Book chapters</p> <ol style="list-style-type: none">1. 'An Insight of Polyphenols in Lung Cancer Chemoprevention'. <i>Polyphenols: Prevention and treatment of human disease</i>. Second edition, Volume 2, Elsevier: Academic press. ISBN 978-0-12-813008-7.2. 'Nutritional management of diabetes- a critical review' in Watson, R.R. (ed.) <i>Bioactive food as dietary interventions for diabetes</i> (Second Edition). London: Academic press, pp. 289-308. |
| Dr. Atul Sherje | <ol style="list-style-type: none">1. Analytical Method Development and Validation for Simultaneous Estimation of Curcumin and Cyclosporine by RP-HPLC, International Journal of Pharmacy and Pharmaceutical Sciences, Vol 11, Issue 2, 2019, 26-33.2. Design and Development of Novel 2-(Morpholinyl)-N-substituted Phenylquinazolin-4-amines as Selective COX-II Inhibitors, Anti-Inflammatory & Anti-Allergy Agents in Medicinal Chemistry, 2019, 18, 1-22, Bentham.3. Mycobacterial siderophores: A review on chemistry and biology of siderophore and its potential as a target for tuberculosis, European Journal of Medicinal Chemistry, Volume 157, 5 September 2018, 783-790; Elsevier; IF = 4.816.4. Bone health and natural products-An insight, Frontiers in Pharmacology, 9, 981 September 2018; IF = 3.8.5. Analytical method development and validation for simultaneous determination of pyrantel pamoate and febantel in an oral dosage form by high-performance liquid chromatography (HPLC), International Journal of Pharmaceutical Sciences and Research, 10(4): 1747-1752, 2019; IF= 0.59.6. Forced degradation studies of olmesartan medoxomil and chlorthalidone: development and validation of stability-indicating RP-HPLC method, Indian Drugs, 56 (03), 39-45, 2019.7. β-Cyclodextrin-based inclusion complexes and nanocomposites of rivaroxaban for solubility enhancement, Journal of Materials Science: Materials in Medicine, 29:186, 2018; IF = 2.448.8. Dendrimers: A versatile nanocarrier for drug delivery and targeting, International Journal of Pharmaceutics, 548 (1) 707-720, 2018; IF= 3.862. |
| Dr. Kavitkumar Patel | <ol style="list-style-type: none">1. Design and Development of Novel 2-(Morpholinyl)-N-substituted Phenylquinazolin-4-amines as Selective COX-II Inhibitors, Anti- |



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| | <p>Inflammatory & Anti-Allergy Agents in Medicinal Chemistry, 2019, 18, 1-22, Bentham.</p> <p>2. Mycobacterial siderophores: A review on chemistry and biology of siderophore and its potential as a target for tuberculosis, European Journal of Medicinal Chemistry, Volume 157, 5 September 2018, 783-790; Elsevier; IF = 4.816.</p> <p>3. Bone health and natural products-An insight, Frontiers in Pharmacology, 9, 981 September 2018; IF = 3.8.</p> <p>4. Imidazole and Pyrazole: Privileged Scaffolds for Anti-Infective Activity, in Mini Reviews in Organic Chemistry, 15(6); 459-475, 2018; IF= 0.722.</p> |
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Research projects submitted/sanctioned

| Faculty | Title of the project | Name of the funding agency/PI/CI | Submission date/Outcome |
|---------------------|---|--|---|
| Dr. Tabassum Khan | 1. "Synthesis, development and efficacy studies of chlorotoxin functionalized hollow gold nanoparticles for therapy of glioblastoma" | DST-SERB/CI | Rs. 24.57 lacs |
| | Ongoing projects: | | |
| | 1. DST-FIST 2. RGSTC 3. RGSTC | PI PI CI | Rs. 100 lacs Rs. 18.80 lacs Rs. 17.42 lacs |
| Dr. Arati Prabhu | 1. Design, synthesis and biological testing of Alzheimer-focused fragment library. | Gufic Biosciences Ltd / SVKM Management PI | Rs. 0.80 lacs |
| | 2. Docking, Synthesis and SAR studies of Mitotic Kinesin Eg5 inhibitors for anticancer activity. | University of Mumbai PI | Rs. 0.50 lacs |
| | Ongoing projects: Foldscope platform for screening of potential anticancer compounds. | DBT | Rs. 8.0 lacs |
| Dr. Vasanti Suvarna | Ligand-conjugated Ultrathin Polyelectrolyte Capsules for Targeted Drug Delivery via Pulmonary route in the Treatment of Visceral Leishmaniasis (Funding requested= Rs. 5425000/-) | DBT-BioCare CI | Shortlisted for presentation at DBT Presented before DBT on Dec 19, 2018 Declined |



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| Dr. Atul Sherje | Cyclodextrin nanosponges-based mucoadhesive hydrogel nasal formulation for management of insomnia to Scientific and Engineering Research Board under the Early Career Research Award category on August 15, 2018 (Funding requested=Rs. 28,96,000/-) | DST-SERB/PI | Declined |
| Dr. Kavatkumar Patel | In-silico based combined approach for the development of CDK2 inhibitors for the treatment of cancer to Scientific and Engineering Research Board under the Early Career Research Award category on August 15, 2018 (Funding requested=Rs. 9,95,000/-) | DST-SERB/PI | Declined |
| Industry consultancy | | | |
| Dr. Tabassum K Dr. Vasanti S Dr. Atul Sherje | Analytical method development and validation studies of three finished products. | Brassica Pharma Pvt. Ltd. | 1.0 lac |

Conferences/Seminars/Workshops/FDP

| Faculty | Name of the event | Attended/Presented | Dates |
|---------------------|--|--------------------|----------------------------------|
| FDP | | | |
| Dr. Tabassum Khan | Continuing Education Programme titled "Futuristic Trends in Teaching, Pedagogy & Research in Pharmaceutical sciences" (3 days) | Attended | SVKM's SPPSPTM Feb 14-16, 2019 |
| Dr. Arati Prabhu | Role of faculty in accreditation, ranking and quality education. (3 days) | Attended | SVKM's SPPSPTM April 23-25, 2019 |
| Dr. Vasanti Suvarna | Role of faculty in accreditation, ranking and quality education. (3 days) | Attended | SVKM's SPPSPTM April 23-25, 2019 |



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| Dr. Atul Sherje | 1. Continuing Education Programme titled "Futuristic Trends in Teaching, Pedagogy & Research in Pharmaceutical sciences" (3 days) | Attended | SVKM's SPPSPTM Feb 14-16, 2019 |
| | 2. One-week Faculty Development Programme. | Attended | HK College of Pharmacy, Mumbai, Nov 26- Dec 01, 2018 |
| Conferences | | | |
| Dr. Tabassum Khan | 1. "Enhancing cytotoxicity of anticancer drug by nanocarrier drug delivery system- development of gemcitabine niosomes" at the International Conference on Advances in Materials Science and Applied Biology. | Poster | Jan 10-12, 2019 Mukesh Patel auditorium, Mumbai |
| | 2. "Cytotoxic flavonoids from the ethyl acetate extract of the aerial roots of <i>Ficus benghalensis</i> Linn". | Invited speaker | 5th International MESMAP, April 24-26, 2019, Cappadocia, Turkey. |
| | 3. "Phytochemical investigations and evaluation of in vitro cytotoxic activity of alkaloid rich fraction of <i>Cynodon dactylon</i> " | Oral presentation | 5th ISPBS joint meeting, April 26-28, 2019, Cappadocia, Turkey. |
| Dr. Arati Prabhu | 1. Drug Discovery SelectBio international conference on "Breakthrough Research in Medicinal Chemistry". | Invited speaker | Mumbai Jan 17-19, 2019 |
| | 2. National Level Conference on "Art of Scientific Writing and Publication/Role of Research Proposal in Scientific Investigations". | Invited speaker | D. Y. Patil College of Pharmacy, Akurdi, Pune Feb 16, 2019 |



| Workshops | | | |
|---------------------|---|--|--|
| Dr. Tabassum Khan | Three-days Skill Development Workshop for Research Students titled 'Chemistry Laboratory Techniques Induction Programme'. | Attended | Dec 6-8, 2018 at BNCP, Mumbai |
| Dr. Arati Prabhu | Three-days Skill Development Workshop for Research Students titled 'Chemistry Laboratory Techniques Induction Programme' | Attended/Resource person/ Organizing committee member | Dec 6-8, 2018 at BNCP, Mumbai |
| Dr. Vasanti Suvarna | <ol style="list-style-type: none"> 1. One-day workshop on Novel trends in hard capsules" 2. One-day workshop on "Replacing regulatory experiments on animals: an introduction to in silico models and in vitro test methods" 3. Three days workshop and symposium on "Med. Chem: Industrial outlook" | Attended | <p>July 6, 2018 at BNCP, Mumbai</p> <p>Nov 3, 2018 at BNCP, Mumbai</p> <p>March 1-3, 2019 at ICT-BCP, Mumbai</p> |
| Dr. Radhika Raheja | <ol style="list-style-type: none"> 1. Three-days Skill Development Workshop for Research Students titled 'Chemistry Laboratory Techniques Induction Programme' 2. Three days workshop and symposium on "Med. Chem: Industrial outlook" | <p>Attended/Resource person/ Organizing committee member</p> <p>Attended</p> | <p>Dec 6-8, 2018 at BNCP, Mumbai</p> <p>March 1-3, 2019 at ICT-BCP, Mumbai</p> |
| Mr. Mihir Khambete | <ol style="list-style-type: none"> 1. Three-days Skill Development Workshop for Research Students titled 'Chemistry Laboratory Techniques Induction Programme'. 2. Two days workshop on "ÄBCD of REBT" | <p>Attended/Resource person/ Organizing committee member</p> <p>Attended</p> | <p>Dec 6-8, 2018 at BNCP, Mumbai</p> <p>Feb 23-24, 2019</p> |



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| | | | Institute for Psychological Health, Thane |
| Seminars | | | |
| Dr. Tabassum Khan | 1. "Natural product inspired medicinal chemistry" at the State Level Seminar on Traditional medicine: Goldmine for modern pharmaceuticals. 2. "Laurentian learnings" at the Dissemination and Orientation Programme by SICI. | Invited talk Invited talk | March 02, 2019 Oriental College of Pharmacy, Mumbai March 29-30, 2019 SICI, New Delhi |
| Dr. Arati Prabhu | Flow Chemistry and its applications | Attended | Nov 17, 2018 at SVKM's SPPSPTM, Mumbai |
| Dr. Vasanti Suvarna | 1. Flow Chemistry and its applications. 2. Pharmacokinetic models and in vivo in vitro application | Attended Attended | Nov 17, 2018 at SVKM's SPPSPTM, Mumbai Feb 9, 2019 BNCP, Mumbai |
| Dr. Atul Sherje | Pharmacokinetic models and in vivo in vitro application | Attended | Feb 9, 2019 BNCP, Mumbai |
| Mr. Mihir Khambete | Flow Chemistry and its applications | Attended | Nov 17, 2018 at SVKM's SPPSPTM, Mumbai |
| Miscellaneous | | | |
| Dr. Tabassum Khan | | | |
| 1. She delivered a talk at the AVISHKAR Research Convention 2018-19, one-day orientation programme, Category 6-Medicine & Pharmacy held at Prin. K.M. Kundanani College of Pharmacy on September 07, 2018. | | | |
| 2. She was invited as a resource person at the AVISHKAR Research Convention 2018-19 workshop organized by the Dept. of Students Development, University of Mumbai, held at University of Mumbai, Kalina campus on September 25, 2018. | | | |
| 3. She was invited as Mentor for grooming and critical review of the posters and presentations of the AVISHKAR 2018-19; Category 6- Medicine & Pharmacy winners selected for the State level round by University of Mumbai on January 06 and 12, 2019. | | | |



4. She was invited as jury panel for the intercollegiate best student award at Rx Festival organized by the Indian Pharmaceutical Association – Maharashtra State Branch on January 18, 2019 at Bombay College of Pharmacy.
5. She facilitated the donation of equipment from Cipla Ltd. (Principal contact -Dr. Manish Gangrade, Head Analytical, Cipla). The college received three stability stations, 1 DSC (Q 2000, TA Instruments) and 1 HPLC (Waters Alliance 2695 with autosampler) from Cipla.

Dr. Arati Prabhu

1. She signed an agreement with Biotech Hub, Assam University for twinning research activities related to the sanctioned DBT- Foldscope project.
2. She participated in syllabus orientation meeting of Mumbai University organic chemistry and pharmaceutical chemistry related subjects (third and final year B. Pharm) as resource person conducted at VESCOP on July 24, 2018.

Dr. Vasanti Suvarna

She delivered a guest lecture at H.K college of Pharmacy on 20th Feb 2019 on Near IR spectroscopy and its applications to pharmacy on 20th Feb 2019.

Dr. Atul Sherje

He attended the syllabus orientation meeting for Pharmaceutical Analysis-II, TY B Pharm (CBCS) at Bombay College of Pharmacy on 10th Jan, 2019.

Dr. Radhika Raheja

1. She attended syllabus orientation meeting for Pharmaceutical Analysis-II, Pharmaceutical Analysis-III (Theory and laboratory) subject of T Y B Pharm and Final year B Pharm (CBCS) at Bombay College of Pharmacy on 10th January, 2019 at The Bombay College of Pharmacy, as a part of the syllabus framing committee.
2. She was a resource person for conducting a workshop on Analytical Skills at the two-day seminar and workshop on “Journey of a drug molecule: Design to Approval” on 24th January 2019.

Faculty appraisal

| Faculty | Total API (AY 2017-18) | API breakup I+II+III | Appraisal date |
|----------------------|------------------------|-------------------------|----------------|
| Dr. Tabassum Khan | 277.89 | 86.09+37.5+156.8 | May 11, 2019 |
| Dr. Arati Prabhu | 163.38 | 77.38+45+41 | May 11, 2019 |
| Ms. Vasanti Suvarna | 225.9 | 90+49+86.9 | May 11, 2019 |
| Dr. Atul Sherje | 200.7 | 88.30+37+75.4 | May 11, 2019 |
| Dr. Kavatkumar Patel | 125.15 | 76.5+13+35.65 | May 11, 2019 |
| Dr. Radhika Raheja | 68.4 | 52+16.4+0 | May 11, 2019 |
| Mr. Mihir Khambete | 66.4 | 53+13.4+0 | May 11, 2019 |

SVKM Management support-Faculty welfare/appreciation

| Faculty | Conference/WS/ Seminar support (Rs) | Research/ Publication incentive (Rs) |
|---------------------|--|--------------------------------------|
| Dr. Tabassum Khan | - | 8333+7142+4167+25000=44642 |
| Dr. Vasanti Suvarna | - | 8333+7142+4167=19642 |
| Dr. Atul Sherje | - | 8333+7142++4167+12500+12500=44642 |



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|----------------------|---|-----------------------|
| Dr. Kavatkumar Patel | - | 8333+7142+4167= 19642 |
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Google scholar citations till May 13, 2019

| Faculty | Google scholar citations |
|----------------------|--------------------------|
| Dr. Tabassum Khan | 204 |
| Dr. Arati Prabhu | 122 |
| Dr. Vasanti Suvarna | 104 |
| Dr. Atul Sherje | 197 |
| Dr. Kavatkumar Patel | 147 |
| Mr. Mihir Khambete | 26 |

Research activity summary

| Research head | Number AY 2018-19 | Number AY 2017-18 | Number AY 2016-17 |
|---------------------------------------|--|---|---|
| Research projects sanctioned/ ongoing | 03 01- Dr. Tabassum Khan (CI, DST-SERB- 24.57 lacs) 02-Dr. Arati Prabhu (PI, University of Mumbai- 0.50 lacs and Scintellec- 0.80 lacs) | 05 04- Dr. Tabassum Khan (02-PI and 01 as CI) PI, DST-FIST-100 lacs PI, RGSTC-18.80 lacs CI, RGSTC-17.42 lacs 01-Dr. Arati Prabhu (PI, DBT-8.0 lacs) | 04 University of Mumbai Dr. Tabassum Khan (0.30 lacs) Dr. Vasanti Suvarna (0.20 lacs) Dr. Kavatkumar Patel (0.30 lacs) Dr. Bhushan Dravyakar (0.25 lacs) |
| Industry consultancy | 03 (Brassica Pharma Pvt. Ltd.) Dr. Tabassum Khan Dr. Vasanti Suvarna Dr. Atul Sherje | - | - |
| Research projects submitted | 09 | 09 | 16 |
| Publications | 16 | 16 | 11 |
| Total impact factor of dept. | 36.789 | 38.815 | 13.15 |
| Books/book chapters | 02 | 03 | 01 |
| Patent (provisional) | - | - | 01 |



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Prepared by

Dr. Tabassum Khan
May 13, 2019