

**AL SHIFA COLLEGE OF PHARMACY**  
**DEPARTMENT OF PHARMACEUTICAL CHEMISTRY**  
**ANNUAL REPORT FOR ACADEMIC YEAR 2016-17**



The academic year 2016-17 exhibited a variety of significant activities that were initiated and executed by the Pharmaceutical Chemistry Department. It was made possible through the dedication of our faculty members and supporting staff. Their constant involvements in academic activities are greatly appreciated. Alshifa College of Pharmacy got NBA accreditation during 2016-17, which is a milestone in the history of our college and the department was actively involved in the entire process of NBA accreditation. The department of Pharmaceutical Chemistry has also approved as a **Research Centre** under KUHS, Thrissur for pursuing PhD in Pharmaceutical Chemistry.

In the following, we shall summarize some of the key initiatives, as well as describe some of the major accomplishments that have been achieved over the past year.

### **Faculty**

The department has nine permanent faculties, of which 4 holds Ph.D Degree and others are pursuing their Doctoral program from reputed National Universities.

### **Result**

It is a proud moment to announce that the department has markedly improved the pass percentage of in all Pharmaceutical chemistry related subjects for Diploma and Degree courses. The results of 2015-16 were higher than the previous years in almost all related subjects. The P.G students continue to excel with 100% result in University Examination.

### Result Analysis for B.Pharm (Academic Year 2015 - 20 16)

| S. No.                     | Subject                                  | No. of Students Registered | No. of Students Appeared | No. of Students Passed |             |              |       | Percentage of Result |
|----------------------------|--|----------------------------|--------------------------|------------------------|-------------|--------------|-------|----------------------|
|                            |  |                            |                          | Distinction            | First Class | Second Class | Total |                      |
| <b>FIRST YEAR B.Pharm</b>  |  |                            |                          |                        |             |              |       |                      |
| 1.                         | Pharmaceutical chemistry-I               | 96                         | 94                       | 15                     | 40          | 16           | 71    | 75.53 %              |
| 2.                         | Pharmaceutical chemistry-II              | 96                         | 95                       | 17                     | 39          | 13           | 71    | 74.73 %              |
| <b>SECOND YEAR B.Pharm</b> |  |                            |                          |                        |             |              |       |                      |
| 3.                         | Pharmaceutical chemistry-III             | 99                         | 98                       | 16                     | 32          | 05           | 53    | 71.42%               |
| 5.                         | Applied Biochemistry & molecular biology | 99                         | 98                       | 10                     | 28          | 14           | 52    | 78%                  |
| <b>THIRD YEAR B.Pharm</b>  |  |                            |                          |                        |             |              |       |                      |
| 6.                         | Pharmaceutical chemistry-IV              | 60                         | 52                       | -                      | 19          | 03           | 21    | 75%                  |
| <b>FINAL YEAR B.Pharm</b>  |  |                            |                          |                        |             |              |       |                      |
| 7.                         | Pharmaceutical chemistry-V               | 48                         | 48                       | 10                     | 26          | 03           | 39    | 82.6%                |

### Result Analysis for M.Pharm

| S. No. | Subject                      | No. of Students Registered | No. of Students Appeared | No. of Students Passed |             |              |       | Percentage of Result |
|--------|------------------------------|----------------------------|--------------------------|------------------------|-------------|--------------|-------|----------------------|
|        |                              |                            |                          | Distinction            | First Class | Second Class | Total |                      |
| 1.     | Pharmaceutical Analysis      | 02                         | 02                       | 02                     | 0           | 0            | 02    | 100 %                |
| 2.     | Medicinal chemistry          | 02                         | 02                       | 02                     | 0           | 0            | 02    | 100 %                |
| 3.     | Advanced organic chemistry   | 02                         | 02                       | 02                     | 0           | 0            | 02    | 100 %                |
| 4.     | Chemistry of natural product | 02                         | 02                       | 02                     | 0           | 0            | 02    | 100 %                |

### Result Analysis for Pharm D

**Academic Year 2015 - 20 16**

| S. No.                     | Subject                            | No. of Students Registered | No. of Students Appeared | No. of Students Passed |             |              |       | Percentage of Result |
|----------------------------|------------------------------------|----------------------------|--------------------------|------------------------|-------------|--------------|-------|----------------------|
|                            |                                    |                            |                          | Distinction            | First Class | Second Class | Total |                      |
| <b>FIRST YEAR Pharm D.</b> |                                    |                            |                          |                        |             |              |       |                      |
| 1.                         | Pharmaceutical Inorganic chemistry | 30                         | 30                       | 07                     | 06          | 17           | 30    | <b>100 %</b>         |
| 2.                         | Pharmaceutical Organic chemistry   | 30                         | 30                       | 07                     | 06          | 17           | 22    | <b>100 %</b>         |
| 3.                         | Medicinal Biochemistry             | 30                         | 29                       | 07                     | 06          | 16           | 29    | <b>100 %</b>         |
| <b>THIRD YEAR Pharm D.</b> |                                    |                            |                          |                        |             |              |       |                      |
| 4.                         | Medicinal chemistry                | 28                         | 28                       | 06                     | 07          | 13           | 26    | <b>92.85%</b>        |

**Research Publications**

The faculty of the department published **14** research articles in peer reviewed National and International Journals during the academic year 2016-17 with a **Cumulative impact factor (Thomson Reuters) of 11.826**

1. **Rasheed, Arun;** Raju, Prasanna Y.; Basha, Jamal D.; Anvesh, M.; Azeem, A. K., Process and Pharmacological Potentials of Kasisa bhasma, a Herbo-Mineral Formulation with Calcinated Ferrous Sulphate. Jordan Journal of Pharmaceutical Sciences. 2016, (9) 141-154.
2. **Rasheed, Arun.,** Lathika, G., Raju, Y.P. Synthesis and pharmacological evaluation of mutual prodrugs of aceclofenac with quercetin, vanillin and L-tryptophan as gastrosparring NSAIDS, Medicinal Chemistry Research(2016) 25: 70. doi:10.1007/s00044-015-1469-7 (**Impact factor.1.465**)
3. **Rasheed Arun,** Yalavarthi PR, Cheramparambil H, Peesa JP, Abdul Khareem A. Synthesis and Pharmacological Evaluation of Acrylate-Based Gastrosparring NSAID Prodrugs. *Archiv der Pharmazie*, (Weinheim). 2017, 350(3-4). doi: 10.1002/ardp.201600325. Epub 2017 (**Impact factor.2.02**)

4. Vadlamudi HC, Yalavarthi PR, **Rasheed Arun**, In vitro characterization studies of self-microemulsified bosentan systems. *Drug Dev Ind Pharm.* 2017, 43 (6):989-995.doi: 10.1080/03639045.2017.1287720. Epub 2017 Feb 16 (**Impact factor.2.241**)
5. JP Peesa, PR Yalavarthi, **A Rasheed**, VBR Mandava, A perspective review on role of novel NSAID prodrugs in the management of acute inflammation, 2016, *Journal of Acute Disease* 5 (5), 364-381.
6. **Sanal Dev.** Synthetic Approaches to Various Class of Topoisomerase II Inhibitors, *Mini-Reviews in Organic Chemistry*" (accepted manuscript May 2017, Ref BSP-MROC-2016-322) (**I.Factor: 1.3**)
7. **Sanal Dev.** Pharmacophore Based 3D-QSAR Analysis of Thienyl Chalcones as a New Class of Human MAO-B Inhibitors. Investigation of Combined Quantum Chemical and Molecular Dynamics Approach, *J. Phys. Chem. B*, 2017, J. Phys. Chem. B, 2017, 121 (6), pp 1186–1203 (**I.Factor: 3.4**)
8. **Sanal Dev.** "Discovery of Camptothecin based Topoisomerase I Inhibitors: Identification Using an Atom based 3D-QSAR, Pharmacophore Modeling, Virtual Screening and Molecular Docking Approach", *Combinatorial Chemistry & High Throughput Screening*, 2016, 19 (9), 752-763. (**I.Factor: 1.4**).
9. **Sanal Dev.** Pharmacophore Modeling, 3D-QSAR and Molecular Docking of Furanochalcones as Inhibitors of Monoamine Oxidase-B. *Central nervous system agents in medicinal chemistry.* 2016, 16(2), 105-111.
10. **Sanal Dev.** Molecular Docking Studies of Some Novel Antidepressant 5-Substituted Phenyl-3-(Thiophen-2-yl)-4,5-Dihydro-1h-Pyrazole-1-Carboxamides against Monoamine Oxidase Isoforms. *Central nervous system agents in medicinal chemistry*, 2016, 16(2), 75-80.
11. Balasubramanian T, **Balan.P**, Suriyaprakash TNK. Effect of potent ethyl acetate extract of Amaranthus Hybridus Instreptozocin-induced diabetic rats. *International journal of research in Pharmacology & Pharmacotherapeutics.* Dec-2016 (special issue) page; 120-129.
12. **Jemi Jacob, Neethu Varghese , Shebina P Rasheed** "Recent Advances in the Synthesis of Isoquinoline and its Derivatives: A Review" ,*World Journal of Pharmacy and Pharmaceutical sciences* , Volume 5 issue 7, Page 1821-1827
13. **Neethu Varghese, Jemi Jacob, Mythri M, Nija B** "Synthesis of Thiazole derivatives: A Review", *World Journal of Pharmacy and Pharmaceutical sciences*, Volume 5 issue 11, Page 624-636.

14. **Karthika. S.**, K.Girija, Nisha Mathew entitled on Synthesis, Characterization and Evaluation of Anti-Oxidant and Anthelmintic Activity of Substituted Mannich Base Aryl Imidazole Derivatives, *World Journal of Pharmaceutical Research* Volume 5, Issue 5, 1018-1025.

### Awards and Honours

- ✓ Shebina P Rasheed secured Second prize for the oral presentation on "Comparative evaluation of shankha bhasma–A herbo mineral Formulation under drug discovery process and Phytomedicine" Research day 2017 at Amrita school of Pharmacy, Amrita Vishwa Vidyapeetham, Amrita University, Kochi on March 2017.
- ✓ Athulya.K.A.(II.M.Pharm) Bagged second prize for the oral presentation on the topic **Brain targeting aminoacid Pro-drug of dexibuprofen as Neuro-protective agents: Synthesis, characterization and pharmacological evaluation** at National Symposium on Biomaterial Scaffolds: "Recent Advances and Challenges" on 29<sup>th</sup> March 2017 at St James College of Pharmaceutical Sciences, Chalakudy-680307
- ✓ Ansiya Siraj.(II.M.Pharm) Bagged Third prize for the oral presentation on the topic **Anti-Inflammatory Effect Of Amaranthus Hybridus Ethanol Extract In Rats** at National Symposium on Biomaterial Scaffolds: "Recent Advances and Challenges" on 29<sup>th</sup> March 2017 at St James College of Pharmaceutical Sciences, Chalakudy-680307.
- ✓ Dr.Arun Rasheed received appreciation for **highly cited researcher** of the year 2016 by Thomson Reuters.
- ✓ Dr.Sanal Dev become the **member of Prestigious American Chemical Society membership**, New York USA.

### Research Funds

#### Funds received

1. Dr. Arun Rasheed received financial assistance of Rupees: 12,000/- from KSCSTE, Trivandrum for P.G. student project entitled "*Novel Dexibuprofen prodrug for Alzheimers disease: Synthesis, Pharmacological Evaluation and brain targeting studies*".

#### Funds Applied

2. Dr. Sanal Dev applied for funding from SERB/DBT for the project *Development of Screening Protocols for Drug Repositioning Using Computational Tools and Their Biological Validation*, Fund applied for **Rs.33,25,000/-**
3. Dr. Arun Rasheed applied for funding from SERB/DBT for the project *Synthesis, Development and Characterization of LAT-1 targeted amino acids prodrugs of Dexibuprofen for the treatment of Alzheimer's disease*. Fund applied for **Rs. 49,57,000/-**
4. Dr. Arun Rasheed applied for funding from **AICTE under RPS scheme** for the project entitled "*Novel dexibuprofen prodrugs for alzheimer's disease: synthesis, pharmacological evaluation and brain targeting studies*"\_Fund applied for **Rs. 17,95000/-**
5. Dr. Arun Rasheed applied for funding from **AICTE under MODROB Scheme** for the project *Modernisation of Medicinal Chemistry Laboratory*. Fund applied for **Rs:18,15000/-**
6. Dr.Sanal Dev applied for an international funding from **The American Chemical Society, U.S.A.** for attending *Global Chemists Code of Ethics Science & Technology Leadership Institutes Program 2017*, Australia.

#### **Presentation in National and International Conferences**

1. Dr. Arun Rasheed, presented research paper on 'Macromolecular pro-drugs of aceclefanac and dexibuprofen' at Kerala Science Congress at Marthoma College on Decemeber 2016 at Thiuvalla, Kerala.
2. Dr.Jemi Jacob presented a research paper on "Synthesis and biological evaluation of isoquinoline derivatives for their anti-inflammatory agents" for the "RESEARCH DAY 2017" held during 17th & 18th March 2017 organized by Amrita School of Pharmacy.
3. Dr.Balan presented research paper on 'A Review of IPR Development in India'. Poster presentation in Two days TEQIP –II Sponsored National Conference on “Innovation and Future Directions in Pharmaceutical Product and Process Development (P3D 2016)” held on 9<sup>th</sup> and 10<sup>th</sup> Sep 2016. Organized by Department of Pharmaceutical Technology, Bharathidasan Institute of Technology, Anna University, Tiruchirappalli. Tamilnadu.
4. Shebina P Rasheed Presented poster on Evaluation of Herbo-mineral Formulation Varatika Bhasma. in the ICCNAN,16-Ist international conference on Nanoscience and Nanotechnology, VIT University, Vellure 19<sup>th</sup> to 21<sup>st</sup> Oct.2016.

5. Visakha Rajan, student of First year M.Pharm, presented research paper on 'Synthesis and characterization of biodegradable macromolecular prodrug of NSAIDS', Research day 2017 Held at Amrita school of Pharmacy, Amrita Vishwa Vidyapeetham, Amrita University, Kochi on March 2017.
6. Swathi, student of First year M.Pharm, presented research paper on "Synthesis and pharmacological evaluation of mutual prodrugs of aceclofenac/quarcetine as gastro sparing NSAIDs" Research day 2017 held at Amrita School of Pharmacy, Amrita Vishwa Vidyapeetham, Amrita University, Kochi on March 2017.
7. Archana P.S, Farhana K.C, Ayishathul Fasma, Fathimath Yasira, Febina.K, students of Fourth year B.Pharm, presented "An attempt to prepare calcium tablet from egg shell' for the "RESEARCH DAY 2017" held during 17<sup>th</sup> & 18<sup>th</sup> March 2017 organized by Amrita School of Pharmacy.

#### **Invited lecture**

1. Dr.Sanal Dev delivered lecture on "***In silico Approach for the Lead Discovery of Topoisomerase II Inhibitors***" during the seminar on "***Advancing Chemotherapy with a Merge of Medicinal Chemistry and Bioinformatics***" organized by Karpagam College of Pharmacy, Coimbatore on 17<sup>th</sup> June 2016 .
2. Dr.Sanal Dev delivered lecture on '***Development of Screening Protocol for Drug Repositioning Using Insilico Tools***', during **Research Day 2017** at Amrita School of Pharmacy on 17<sup>th</sup> & 18<sup>th</sup> March 2017.

#### **Faculty registered for Ph.D**

The following faculty members of our department have registered for **Ph.D** at Annamalai University, Chidambaram.

1. Mrs. Karthika. S
2. Ms. Mythri. M
3. Mrs. Nija. B

#### **Approved PhD guides**

1. Dr. Arun Rasheed and Dr.Sanal Dev are appointed as approved Guide for Annamalai University, Annamalai Nagar, Chidambaram
2. Dr. Arun Rasheed and Dr.Balan approved as PhD guide in Pharamaceutical sciences, KUHS Thrissur.
3. Dr. Arun Rasheed approved as PhD guide in JJTU Rajasthan.