SCINTELLECT – An undergraduate research initiative
Annual report June 2020 - May 2021 (AY 2020-21)

SCINTELLECT, the undergraduate research initiative of BNCP started in 2016 encourages undergraduate students to become involved in research projects and publications under the mentorship of a faculty member. This is designed to provide a platform to the students to explore and engage in a full-time research experience in close collaboration with faculty members, postgraduate and PhD students. It provides the opportunity to nurture and hone scientific writing skills in the students that subsequently gives them a competitive advantage over their peers in the higher education and industry sectors positively impacting their employability. The outcomes after this experiential learning could be presentation of research project in seminars/conferences, research competitions like AVISHKAR and publication in reputed journals.

SCINTELLECT has gained popularity amongst the undergraduate students and there are 08 student groups (30 students) working on diverse projects and reviews with faculty mentors across all disciplines of pharmaceutical sciences. The laboratory work took a setback due to the COVID lockdown situation. This academic year witnessed more of publication activity along with UG participation in 15th Avishkar Research Convention. This involved a competition of research proposals across diverse categories of Avishkar like- Pure Sciences, Medicine & Pharmacy, Engineering & Technology, Agriculture & animal husbandry.

Commendable Outcomes:

1. Publication of a review article in Molecules, MDPI (IF= 3.267).
2. Four student groups participated in 15th Avishkar Research Convention organized by University of Mumbai, of which 2 groups were selected for final round scheduled on June 24, 2021.

Prepared by

Dr. Tabassum Khan

June 19, 2021

List of BNCP SCINTELLECT projects June 2020- May 2021
Undergraduate student research promotion activity

Name of faculty	Title
Dr. Munira Momin	**15th Avishkar research project proposals April 2021** Outcome: Group 1- Rucha Mande & Yashvi Lodaya (Submitted a proposal in Category 5)
Dr. Tabassum Khan	**15th Avishkar research project proposals April 2021** Outcome: Group 1- Jinal Shah & Divisha Rathod (Submitted a proposal in Category 4) Group 2- Palak Jethva & Hitanshi Mehta (Submitted a proposal in Category 3; selected for final round) Group 3- Falak Kadar, Dhruvi Dotia & Priti Yadav (Submitted a proposal in Category 6 ; selected for final round) **Review articles work** Group 1- Jhanvi Jhaveri & Zarna Raichura Outcome: Review published, Jhanvi Jhaveri, Zarna Raichura, Tabassum Khan, Munira Momin and Abdelwahab O*, Chitosan nanoparticles- insight into properties, functionalization and applications in drug delivery and theranostics, **Molecules**, 2021, *26*(2), 272, MDPI. **IF= 3.267** Group 2- Dhvani Desai & Sharvari Patil Outcome: MS communicated in May 2021 Group 3- Priyanka Bafna, Mohnishh Balsara, Rishi Kothari Outcome: MS ready for submission in June 2021
Dr. Lokesh Kumar Bhatt	Screening of drugs for neuroprotective activity Student: Shubham Mewada Status: Animal model standardized in Zebrafish. Work stopped due to COVID lockdown
Dr. Meenal M Rane	Review article on " Regenerative medicines–Recent development ready to submit by end of June2021 Students: Mohnish Balsara, Priyanka Bafna (Final Yr. B. Pharm), Riddhi Ahuja(M. Pharm)

Total SCINTELLECT projects = 09

SCINTELLECT-GLIMPSES

Publications

molecules

MDPI

Review

Chitosan nanoparticles-insight into properties, functionalization and applications in drug delivery and theranostics

Jhanvi Jhaveri[1], Zarna Raichura[1], Tabassum Khan*[2], Munira Momin[3] and Abdelwahab Omri*[4]

[1] SVKM's Dr. Bhanuben Nanavati College of Pharmacy, Mumbai, Maharashtra and India
[2] Department of Pharmaceutical Chemistry, SVKM's Dr. Bhanuben Nanavati College of Pharmacy, Mumbai, Maharashtra, India
[3] Department of Pharmaceutics, SVKM's Dr. Bhanuben Nanavati College of Pharmacy, Mumbai, Maharashtra, India
[4] The Novel Drug & Vaccine Delivery Systems Facility, Department of Chemistry and Biochemistry, Laurentian University, Sudbury, ON, Canada
* Correspondence: aomri@laurentian.ca

Abstract: Nanotechnology based development of drug delivery systems is an attractive area of research in formulation driven R & D laboratories that makes administration of new and complex drugs feasible. It plays a significant role in the design of novel dosage forms by attributing target specific drug delivery, controlled drug release, improved, patient friendly drug regimen and lower side effects. Polysaccharides, especially chitosan, occupy an important place and are widely used in nano drug delivery systems owing to their biocompatibility and biodegradability. This review focuses on chitosan nanoparticles and envisages to provide an insight into the chemistry, properties, drug release mechanisms, preparation techniques and the vast evolving landscape of diverse applications across disease categories leading to development of better therapeutics and superior clinical outcomes. It summarizes recent advancement in the development and utility of functionalized chitosan in anticancer therapeutics, cancer immunotherapy, theranostics and multistage delivery systems

Review article-IF: 3.267

15th AVISHKAR Research Convention, 2021

Category 3: Pure Sciences, Level-UG

University of Mumbai
15th Inter-Collegiate/
Institute/Department
AVISHKAR
Research Convention: 2020-21
SELECTION ROUND
(District/Zonal Level Research Proposal Competition)

Certificate of Merit

This is to certify that **Ms. Jethva Palak** of **Dr. Bhanuben Nanavati College of Pharmacy, Vile Parle** has participated and submitted a research proposal titled **Cosmeceuticals: where beauty meets wellness** in **Pure Sciences** category and **UG** level for the **Selection Round** of **15th Inter-Collegiate / Institute / Department Avishkar Research Convention: 2020-21** for **All Pharmacy Colleges of all Districts** zone. The said research proposal is selected for **Final Round** of **15th Inter-Collegiate/Institute/Department Avishkar Research Convention: 2020-21.**

Dr. (Mrs.) Minakshi Gurav
OSD,
Avishkar Research Convention,
University of Mumbai

Dr. Sunil Patil
Director,
Department of Students' Development,
University of Mumbai

Mumbai
June 12, 2021

University of Mumbai
15th Inter-Collegiate/
Institute/Department
AVISHKAR
Research Convention: 2020-21
SELECTION ROUND
(District/Zonal Level Research Proposal Competition)

Certificate of Merit

This is to certify that **Ms. Mehta Hitanshi** of **Dr. Bhanuben Nanavati College of Pharmacy, Vile Parle** has participated and submitted a research proposal titled **Cosmeceuticals: where beauty meets wellness** in **Pure Sciences** category and **UG** level for the **Selection Round** of **15th Inter-Collegiate / Institute / Department Avishkar Research Convention: 2020-21** for **All Pharmacy Colleges of all Districts** zone. The said research proposal is selected for **Final Round** of **15th Inter-Collegiate/Institute/Department Avishkar Research Convention: 2020-21.**

Dr. (Mrs.) Minakshi Gurav
OSD,
Avishkar Research Convention,
University of Mumbai

Dr. Sunil Patil
Director,
Department of Students' Development,
University of Mumbai

Mumbai
June 12, 2021

Category 6: Medicine & Pharmacy, Level-UG

University of Mumbai
15th Inter-Collegiate/
Institute/Department
AVISHKAR
Research Convention: 2020-21
SELECTION ROUND
(District/Zonal Level Research Proposal Competition)

Certificate of Merit

This is to certify that **Ms. Kadar Falak** of **Dr. Bhanuben Nanavati College of Pharmacy, Vile Parle** has participated and submitted a research proposal titled **Cuttlecol peel-off mask for naturally beautiful skin** in **Medicine and Pharmacy** category and **UG** level for the **Selection Round** of **15th Inter-Collegiate / Institute / Department Avishkar Research Convention: 2020-21** for **All Pharmacy Colleges of all Districts** zone. The said research proposal is selected for **Final Round** of **15th Inter-Collegiate/Institute/Department Avishkar Research Convention: 2020-21.**

Dr. (Mrs.) Minakshi Gurav
OSD,
Avishkar Research Convention,
University of Mumbai

Dr. Sunil Patil
Director,
Department of Students' Development,
University of Mumbai

Mumbai

University of Mumbai
15th Inter-Collegiate/
Institute/Department
AVISHKAR
Research Convention: 2020-21
SELECTION ROUND
(District/Zonal Level Research Proposal Competition)

Certificate of Merit

This is to certify that **Ms. Dotiya Dhruvi** of **Dr. Bhanuben Nanavati College of Pharmacy, Vile Parle** has participated and submitted a research proposal titled **Cuttlecol peel-off mask for naturally beautiful skin** in **Medicine and Pharmacy** category and **UG** level for the **Selection Round** of **15th Inter-Collegiate / Institute / Department Avishkar Research Convention: 2020-21** for **All Pharmacy Colleges of all Districts** zone. The said research proposal is selected for **Final Round** of **15th Inter-Collegiate/Institute/Department Avishkar Research Convention: 2020-21.**

Dr. (Mrs.) Minakshi Gurav
OSD,
Avishkar Research Convention,
University of Mumbai

Dr. Sunil Patil
Director,
Department of Students' Development,
University of Mumbai

Mumbai
June 12, 2021

University of Mumbai
15th Inter-Collegiate/
Institute/Department
AVISHKAR
Research Convention: 2020-21
SELECTION ROUND
(District/Zonal Level Research Proposal Competition)

Certificate of Merit

This is to certify that **Ms. Yadav Priti** of **Dr. Bhanuben Nanavati College of Pharmacy, Vile Parle** has participated and submitted a research proposal titled **Cuttlecol peel-off mask for naturally beautiful skin** in **Medicine and Pharmacy** category and **UG** level for the **Selection Round** of **15th Inter-Collegiate / Institute / Department Avishkar Research Convention: 2020-21** for **All Pharmacy Colleges of all Districts** zone. The said research proposal is selected for **Final Round** of **15th Inter-Collegiate/Institute/Department Avishkar Research Convention: 2020-21.**

Dr. (Mrs.) Minakshi Gurav
OSD,
Avishkar Research Convention,
University of Mumbai

Dr. Sunil Patil
Director,
Department of Students' Development,
University of Mumbai

Mumbai
June 12, 2021