



**SCINTELLECT – An undergraduate research initiative
Annual report June 2021 - June 2022 (AY 2021-22)**

SCINTELLECT, the undergraduate research initiative of BNCP started in 2016 encourages and facilitates undergraduate students to engage in research projects and scientific writing-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 students that subsequently gives them a competitive advantage over their peers in the higher education and industry sectors augmenting their employability. The outcomes of this experiential learning could be presentation of research project in seminars/conferences, research competitions like AVISHKAR and publication in peer reviewed national and international journals.

SCINTELLECT has gained popularity amongst the undergraduate students and there are 08 student groups (20 students) working on projects and reviews with faculty mentors across diverse 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.

SCINTELLECT outcomes till date:

1. Review titled, “Lanthanide-doped up conversion luminescent nanoparticles- evolving role in bioimaging, biosensing, and drug delivery”, authored by Palak Jethva published in **Materials**, 2022, 15(7), 2374. **IF= 3.623**.
2. Review titled, “Chitosan nanoparticles- insight into properties, functionalization and applications in drug delivery and theranostics”, authored by Jhanvi Jhaveri and Zarna Raichura published in **Molecules**, 2021, 26(2), 272, **IF= 3.267** has reached an impressive 61 citations in 1.5 years.
3. Review titled, “Polysaccharides as potential anticancer agents—A review of their progress” authored by Amrita Date, Hardik Chawda, Krina Patel published in **Carbohydrate Polymers**, 2019, 210, 412-428, **IF= 5.51** has reached an impressive 128 citations in 3.5 years.
4. Four second year B. Pharm student groups participated in 15th Avishkar Research Convention (research project proposals based inter-collegiate competition), June 2021 organized by the University of Mumbai, of which 2 groups were selected for the final round and one group - Palak Jethva and Hitanshi Mehta were awarded the second prize in Category 2- Pure Sciences, .

Prepared by

Dr. Tabassum Khan
July 15, 2022

List of BNCP SCINTELLECT projects June 2021 - June 2022
Undergraduate student research promotion activity

Total SCINTELLECT ongoing projects = 08

Name of faculty	Title
Dr. Munira Momin	Review article (T.Y.B. Pharm) Review titled,“ Lanthanide-doped up conversion luminescent nanoparticles- evolving role in bioimaging, biosensing, and drug delivery”, authored by Palak Jethva published in Materials, 2022, 15(7), 2374. IF= 3.623.
Dr. Arundhati Abhyankar	Review article Students: Patel Simran, Sandha Khushi, Jain Prachi, Waingankar Anushka (T.Y.B. Pharm), MS ready for communication to Chemical Biology and Drug Design.
Dr. Meenal M Rane	1. Review article entitled “ Role of Nutraceuticals in Bone health “ published in International Journal of Biology, Pharmacy and Allied sciences, https://doi.org/10.31032/IJBPAS/2021/10.12.1027 , December 2021 10(12): 290-310 Students: Pankaj Paradia (Final year B. Pharm) 2. Review article on “ Overview on Scope and Advancement in Regenerative medicines” is in communication with the journal “International Journal of Health Sciences”, Scopus indexed. Students: Mohnish Balsara, Priyanka Bafna (Final Yr. B. Pharm), Riddhi Ahuja (M. Pharm)
Dr. Tabassum Khan	15 th Avishkar research project proposals 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) Reviews: Group 1- Palak Jethva Review titled,“ Lanthanide-doped up conversion luminescent nanoparticles- evolving role in bioimaging, biosensing, and drug delivery”, authored by Palak Jethva published in Materials, 2022, 15(7), 2374. IF= 3.623. Group 2- Dhvani Desai & Sharvari Patil Outcome: MS accepted for publication in IJPSR July 2022 issue Group 3- Priyanka Bafna, Mohnishh Balsara, Rishi Kothari Outcome: MS communicated to Molecules and is under revision Ongoing Research project Kunjal, Kinjal and Mahira (T.Y.B. Pharm)- Synthesis of selected scaffolds Review articles (T.Y.B. Pharm) Group 1- Shefali Patel, abstract accepted in Materials, MS ready for communication Group 2- Jinal Shah and Divija Rathod, MS ready for communication Group 3- Avantika Kathare, MS preparation underway Group 4- Arshi Bilakhiya, MS ready for communication Group 5- Hitanshi Mehta and Tanmay Lohiya, MS preparation underway

SCINTELLECT-GLIMPSES

Publications



Shri Vile Parle Kelavani Mandal's
Dr. Bhanuben Nanavati College Of Pharmacy



Heartiest Congratulations!

For
Publication
"Lanthanide-Doped Upconversion Luminescent Nanoparticles—
Evolving Role in Bioimaging, Biosensing, and Drug Delivery" in
Materials
Impact factor- 3.623
Under
BNCP Scintellect
(A Research Review Program for UG Students)



materials
Lanthanide-Doped Upconversion Luminescent Nanoparticles—Evolving Role in Bioimaging, Biosensing, and Drug Delivery
Palak Jethva¹, Munira Momin², Tabassum Khan^{3,*} and Abdelwahab Omri^{4,*}



Ms. Palak Jethva
TY B. Pharm. Student





Dr. Munira Momin
Principal & Professor



Dr. Tabassum Khan
Professor & HOD- Pharm Chemistry

Co-author: Dr. Abdelwaheb Omri Laurentian University, Canada



Review

Lanthanide-Doped Upconversion Luminescent Nanoparticles—Evolving Role in Bioimaging, Biosensing, and Drug Delivery

Palak Jethva¹, Munira Momin², Tabassum Khan^{3,*} and Abdelwahab Omri^{4,*}

- ¹ SVKM's Dr. Bhanuben Nanavati College of Pharmacy, Mumbai 400 056, India; palakjethva00@gmail.com
- ² Department of Pharmaceutics, SVKM's Dr. Bhanuben Nanavati College of Pharmacy, Mumbai 400 056, India; munira.momin@bncp.ac.in
- ³ Department of Pharmaceutical Chemistry, SVKM's Dr. Bhanuben Nanavati College of Pharmacy, Mumbai 400 056, India
- ⁴ The Novel Drug & Vaccine Delivery Systems Facility, Department of Chemistry and Biochemistry, Laurentian University, Sudbury, ON P3E2C6, Canada
- * Correspondence: tabassum.khan@bncp.ac.in (T.K.); aomri@laurentian.ca (A.O.)

Abstract: Upconverting luminescent nanoparticles (UCNPs) are "new generation fluorophores" with an evolving landscape of applications in diverse industries, especially life sciences and healthcare. The anti-Stokes emission accompanied by long luminescence lifetimes, multiple absorptions, emission bands, and good photostability, enables background-free and multiplexed detection in deep tissues for enhanced imaging contrast. Their properties such as high color purity, high resistance to photo-bleaching, less photodamage to biological samples, attractive physical and chemical stability, and low toxicity are affected by the chemical composition; nanoparticle crystal structure, size, shape and

15th AVISHKAR Research Convention, 2021
Second prize in Category 3: Pure Sciences, Level-UG

NATIONAL STUDENT RESEARCH AVISHKAR 2020-21
CATEGORY 3: PURE SCIENCE (UG)

COSMECEUTICALLY YOURS: WHERE BEAUTY MEETS WELLNESS



Palak Jethva & Hitanshi Mehta


 University of Mumbai
 15th Inter-Collegiate/
 Institute/Department
AVISHKAR
 Research Convention: 2020-21
FINAL ROUND
 (University 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 presented a research proposal titled **Cosmeceuticals: where beauty meets wellness** in Pure Sciences category and UG level and secured **SECOND** Rank at the Final Round of 15th Inter-Collegiate / Institute / Department Avishkar Research Convention: 2020-21 organised on Virtual Platform by University of Mumbai on June 23, 2021.


 Dr. (Mrs.) Minalakshi Garav
 OSD,
 Avishkar Research Convention,
 University of Mumbai


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


 Charchhata, Mumbai
 June 23, 2021




 University of Mumbai
 15th Inter-Collegiate/
 Institute/Department
AVISHKAR
 Research Convention: 2020-21
FINAL ROUND
 (University 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 presented a research proposal titled **Cosmeceuticals: where beauty meets wellness** in Pure Sciences category and UG level and secured **SECOND** Rank at the Final Round of 15th Inter-Collegiate / Institute / Department Avishkar Research Convention: 2020-21 organised on Virtual Platform by University of Mumbai on June 23, 2021.


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 University of Mumbai
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 Institute/Department
AVISHKAR
 Research Convention: 2020-21
FINAL ROUND
 (University Level Research Proposal Competition)

Certificate of Merit

This is to certify that Dr. Tabassum Khan of Dr. Bhanuben Nanavati College of Pharmacy, Vile Parle has guided a research proposal titled **Cosmeceuticals: where beauty meets wellness** which was Presented by Ms. Jethva Palak in Pure Sciences category and UG level and secured **SECOND** Rank at the Final Round of Inter-Collegiate / Institute / Department Avishkar Research Convention: organised on Virtual Platform by University of Mumbai on June 23, 2021.


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 University of Mumbai


 Charchhata, Mumbai
 June 23, 2021



Publications



**International Journal of Biology, Pharmacy
and Allied Sciences (IJBPAS)**

'A Bridge Between Laboratory and Field'

www.ijbpas.com

A REVIEW ON ROLE OF NUTRACEUTICALS IN BONE HEALTH

RANE M^{*}, PARMAR U, AHUJA R AND PARADIA P

SVKM's Dr. Bhanuben Nanavati College of Pharmacy, Gate No.1 Mithibai College Campus, V.M.
Road, Navpada, Suvarna Nagar, Vile Parle (West), Mumbai-400056, Maharashtra

Running title: Nutraceuticals for bone health

***Corresponding Author: E Mail: Dr. Meenal M Rane: meenalrane12@gmail.com**

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<https://doi.org/10.31032/IJBPAS/2021/10.12.1027>

ABSTRACT

Advancements in medical technology has led to a new category of products with medicinal value is developed which involves the use of nutraceuticals. A nutraceutical is any substance that is a food or part of food that provides health benefits, including prevention or treatment of diseases. Nutraceuticals are pharmaceutical alternatives that claim physiological benefits however, they differ from a typical pharmaceutical product wherein they aren't stringently sanctioned under the law. This article aims to postulate promising nutraceutical alternatives to medicines that can be potentially developed into marketed preparations to improve bone health. Thus, combatting bone disorders such as osteoporosis, osteoarthritis, or faster recovery from fracture improving bone strength in normal humans. The newer nutraceutical alternatives for improving bone health is promising. We conclude on our fair understanding and judgment that in due course, these alternative approaches may completely replace the traditional methods.

Keywords: Bone Health, Bone Remodeling, Nutraceuticals, Osteoporosis, Osteoarthritis