NIPiCON-IPS 2022

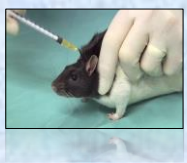
6th Nirma Institute of Pharmacy International Conference

Jointly organized with Indian Pharmacological Society

"Emerging Opportunities and Challenges in Pharmacology and Pharmaceutical Sciences for Drug Discovery and Healthcare Innovations"

February 17-19, 2022

SOUVENIR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* Antimicrobial activity of n-6, n-7 and n-9 fatty acids and their esters for oral microorganisms. Arch Oral Biol. 2010 Aug; 55(8): 555–560.
** Code of Federal Regulations Title 21, Volume 3 Revised as of April 1, 2020 U.S. Food and Drug Administration

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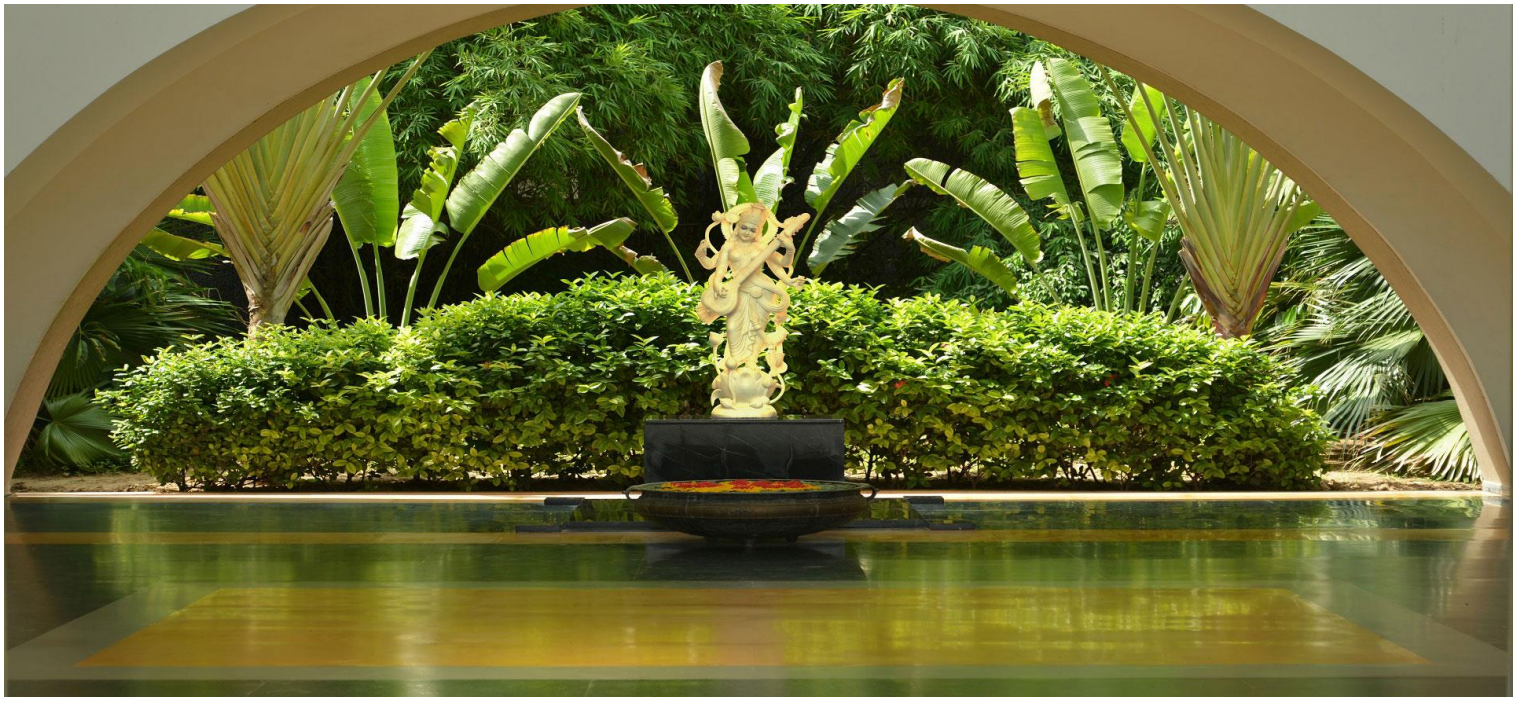

OUR MOTTO

From darkness, lead me to light

Vision

Striving to excel in pharmaceutical education, research & innovation to develop outstanding professionals catering to the health care needs of the humankind.

Mission

The institute aims to develop employable students, researchers and entrepreneurs by inculcating critical thinking, problem solving ability, ethical values and leadership skills. Institute provides vibrant environment for continuous learning by strengthening industrial collaboration for developing competent professionals.

Quality Statement

To develop high quality professionals who reflect and demonstrate values that the University stands for, through innovation and continuous improvement in facilitation of learning, research and extension activities.

Bhupendra Patel

Chief Minister,
Gujarat State

Message

"Healing the sick was once considered a sacred gift
bestowed on mortals by the Gods."

-E.A. Bucchianeri

The efforts made by the Government of Gujarat in the health sector have been transformative and rejuvenating. The last few years have been highly prolific, contending and rewarding at the same time. As a result of strengthening the existing structures, we are building further on past success and laying out the foundation of the future of the healthcare in the State. The combination of pharmaceuticals, chemical and pharmaceutical sciences has made our state a leader in pharmaceuticals, medical, drug-maker and healthcare sectors across the nation.

I am much pleased to learn that Institute at Pharmacy is organizing its flagship event 6th International Conference (NIPiCON) jointly with Indian Pharmacological Society (IPS) as NIPiCON-IPS 2022 on the theme "Emerging Opportunities and Challenges in Pharmacology and Pharmaceutical Sciences for Drug Discovery and Healthcare Innovations" at Ahmedabad during February 17-19, 2022. I convey my best wishes to Team-NIPiCON for the grand success of the conference among all the stakeholders including students.

(Bhupendra Patel)

To
Prof. Manjunath D. Ghate, *Director,*
Institute of Pharmacy, Nirma University,
Sarkhej-Gandhinagar Highway,
Ahmedabad-3 82481 E-mail:
director.ip@nirmauni.ac.in

Mr. Jitubhai Vaghani

Education minister

Azadi Ka Amrit Mahotsav

JITUBHAI VAGHANI

No. Edu (P,S & A) H.T.S.T./VIP-336 /2021

Minister,
Education (Primary, Secondary and Adult), Higher and Technical Education, Science & Technology
Government of Gujarat,
Swarnim Sankul-1, 2nd Floor, New Sachivalaya,
Gandhinagar-382 010

Date : 14 FEB 2022

MESSAGE

I am very much pleased to know that Institute at Pharmacy is organizing its 6th International Conference (NIPiCON) jointly with Indian Pharmacological Society (IPS) as NIPiCON-IPS 2022 on the theme "Emerging Opportunities and Challenges in Pharmacology and Pharmaceutical Sciences for Drug Discovery and Healthcare Innovations" at Nirma University, Ahmedabad campus during February 17-19, 2022.

The theme of the conference is of great relevance in today's era. It recognizes the importance of pharmaceutical innovation and its contribution in improving health and quality of life which ultimately leads to progress of society. It is praiseworthy that Institute of Pharmacy, Nirma University has chosen such a relevant theme which would give a platform to scientists and young researchers to present their ideas.

I extend my best compliments to the Institute of Pharmacy for the grand success of this conference.

(Jitubhai Vaghani)

To,
Director,
Institute of Pharmacy,
Nirma University, Ahmedabad.

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Residence : Bungalow No.4, Minister's Residence, Sector-20, Gandhinagar, (Gujarat)
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सत्यमेव जयते

स्वच्छ भारत
एक कदम स्वच्छता की ओर

आजादी का अमृत महोत्सव

डॉ. एस. चंद्रशेखर
Dr. S. Chandrasekhar

सचिव
भारत सरकार
विज्ञान एवं प्रौद्योगिकी मंत्रालय
विज्ञान एवं प्रौद्योगिकी विभाग
Secretary
Government Of India
Ministry of Science and Technology
Department of Science and Technology

9th February 2022

MESSAGE

I am greatly pleased to note that the Institute of Pharmacy, Nirma University, Ahmedabad is organizing the 6th International Conference (NIPiCON) jointly with Indian Pharmacological Society (IPS) as NIPiCON-IPS 2022 in virtual format during February 17-19, 2022.

The conference is being organized on the theme "Emerging Opportunities and Challenges in Pharmacology and Pharmaceutical Sciences for Drug Discovery and Healthcare Innovations". Due to new emerging diseases, the dynamically changing healthcare system mandates critical pharmacological interventions along-with novel therapeutic solutions. This interdisciplinary approach is the essence of today's scenario to tackle various healthcare issues. The theme of the conference is very apt, which shall provide a vital platform for discussions and knowledge dissemination and would result in fruitful collaboration for all those concerned with the healthcare system.

I offer my heartfelt congratulations and best wishes to the organizers for the grand success of the conference.

(S. Chandrasekhar)

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Dr. Balaram Bhargava
Director general
Indian council of
medical research

सत्यमेव जयते

प्रोफेसर (डा.) बलराम भार्गव, पद्म श्री
एम.डी., डी.एम., एफ.ए.सी.सी. (यू.), एफ.ए.एम.एस.,
एफ.ए.एन.ए., एफ.ए.एच.ए., एफ.ए.एम.डी., एफ.एन.ए., डी.एस.सी.
सचिव, भारत सरकार
स्वास्थ्य अनुसंधान विभाग
स्वास्थ्य एवं परिवार कल्याण मंत्रालय एवं
महानिदेशक, आई सी एम आर

Prof. (Dr.) Balram Bhargava, Padma Shri
MD, DM, FRCP (Glasg.), FRCP (Edin.),
FACC, FAHA, FAMS, FNASc, FASc, FNA, DSc
Secretary to the Government of India
Department of Health Research
Ministry of Health & Family Welfare &
Director-General, ICMR

भारतीय आयुर्विज्ञान अनुसंधान परिषद
स्वास्थ्य अनुसंधान विभाग
स्वास्थ्य एवं परिवार कल्याण मंत्रालय
भारत सरकार
वी. रामलिंगस्वामी भवन, अंसारी नगर
नई दिल्ली - 110 029

Indian Council of Medical Research
Department of Health Research
Ministry of Health & Family Welfare
Government of India
V. Ramalingaswami Bhawan, Ansari Nagar
New Delhi - 110 029

MESSAGE

I am highly pleased to note that Institute at Pharmacy is organizing its flagship event 6th International Conference (NIPiCON) jointly with Indian Pharmacological Society (IPS) as NIPiCON-IPS 2022 on the theme "Emerging Opportunities and Challenges in Pharmacology and Pharmaceutical Sciences for Drug Discovery and Healthcare Innovations" at Nirma University, Ahmedabad campus from February 17-19, 2022.

The theme chosen for this conference is very relevant in the current scenario. Today the interdisciplinary approach of pharmacological and pharmaceutical sciences has led to tremendous technological advancement. Understanding the critical role and interplay of both pharmacological and pharmaceutical science is the need of the hour and it can provide solutions to the various complex issues related to the pharmaceutical field and health care system.

I hope the conference would provide a vital platform for discussions and knowledge dissemination which would result in fruitful collaboration for all those concerned with the healthcare system.

I extend my warm greetings for the occasion and convey my best wishes to the entire team of Institute of Pharmacy for the grand success of the event.

Balram Bhargava

(Balram Bhargava)

Tele.: 26588204, 26589620, Fax (Off.): 91-11-26588662, E-mail: secy-dg@icmr.gov.in

Dr. V. G. Somani
Drug Controller General of India

MESSAGE

The healthcare industry in India can make great strides with a multidisciplinary team of researchers and academicians from diverse fields. Integrating and collaborating different disciplines of science will result in better outcomes and innovations in the field of healthcare.

I am elated to know about the organization of the 6th International Conference (NIPiCON) jointly with Indian Pharmacological Society (IPS) as NIPiCON-IPS 2022 by the Institute of Pharmacy, Nirma University on the theme "Emerging Opportunities and Challenges in Pharmacology and Pharmaceutical Sciences for Drug Discovery and Healthcare Innovations" at Nirma University, Ahmedabad campus from February 17-19, 2022.

The theme is very relevant to the present scenario where there is an urgent need for academicians and researchers from different fields of discipline to join hands and discuss innovative ideas and strategies for betterment of human health.

I heartily congratulate Institute of Pharmacy for organizing this event which will be instrumental in bringing out new thoughts, research and inventions in the field of health care.

Dr. V. G. Somani

Drugs Controller General of India

Mr. Rushikesh Patel
Minister,
Health and Family
Welfare

RUSHIKESH PATEL

No. : H&FW/M.E/WR/WS/ 57/75/ /2022

Minister,
Health and Family Welfare,
Medical Education, Water Resources and Water Supply
Government of Gujarat
2nd floor, Swarnim Sankul-1, Sardar Bhavan,
Sachivalaya, Gandhinagar-382 010.

Date : 16/02/2022

MESSAGE

Innovations in the health care system is the need of the hour and the Indian government extends full support for such type of endeavors. Ensuring healthy lives and promoting well-being for all is important for the progress of a nation.

I am indeed delighted to learn that Institute at Pharmacy is organizing its 6th International Conference (NIPiCON) jointly with Indian Pharmacological Society (IPS) as NIPiCON-IPS 2022 on "Emerging Opportunities and Challenges in Pharmacology and Pharmaceutical Sciences for Drug Discovery and Healthcare Innovations" at Nirma University, Ahmedabad campus during February 17-19, 2022.

The theme chosen for this conference is very apt as per the current times and interdisciplinary approach of various fields can resolve various real health care problems and can give a different perspective to the complex problems of the pharmaceutical sector.

I extend my best compliments to the Institute of Pharmacy for the grand success of the conference.

(Rushikesh Patel)

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Office : 079-23250236, 23250224, 23250218, Fax : 079-23250264, E-Mail : min-health@gujarat.gov.in

Dr. Karsanbhai K. Patel
President
Nirma University

Dr. Karsanbhai K. Patel
President

NIRMA UNIVERSITY

MESSAGE

I am very happy to learn about the organization of the 6th International eConference (NIPiCON) in association with Indian Pharmacological Society (IPS) as NIPiCON-IPS 2022 on the theme "Emerging Opportunities and Challenges in Pharmacology and Pharmaceutical Sciences for Drug Discovery and Healthcare Innovations" during 17th to 19th February, 2022 by Institute of Pharmacy, Nirma University.

The conference theme is apt as it highlights the need of the hour i.e., interdisciplinary research and aims to bring together researchers and practitioners from different sectors of healthcare sector for better innovative outputs to develop solutions for complex issues related to healthcare system.

I can positively assert that this conference will definitely enforce collaborative research efforts in the healthcare field.

I am impressed with the commitment of Institute of Pharmacy, Nirma University for organizing this conference and wish them grand success.

Dr. Karsanbhai K Patel
President
Nirma University

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Shri K. K. Patel
Vice-President
Nirma University

K. K. Patel
Vice President

NIRMA UNIVERSITY
NAAC ACCREDITED 'A' GRADE

MESSAGE

In these trying times, it warms my heart to learn that Institute of Pharmacy, Nirma University in association with Indian Pharmacological Society (IPS) is organizing International eConference NIPiCON-IPS 2022 on the theme of "Emerging Opportunities and Challenges in Pharmacology and Pharmaceutical Sciences for Drug Discovery and Healthcare Innovations" during February 17-19, 2022.

The theme of the conference is well defined and will bring together people from all the frays of healthcare sector and provide networking opportunities for development of innovative solutions to the healthcare requirements and encourage interdisciplinary research.

I am hopeful that the conference will definitely bring in a revolution for better healthcare innovations through brainstorming and collaborative efforts from pharmaceutical and healthcare sector.

I admire the efforts of the Institute of Pharmacy and wish them great success.

Shri K. K. Patel
Vice-President
Nirma University

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Dr. Anup K. Singh
Director General
Nirma University

Dr. Anup K. Singh
Director General

NIRMA UNIVERSITY
NAAC ACCREDITED 'A' GRADE

MESSAGE

I am highly pleased to know that the Institute of Pharmacy, Nirma University is jointly organizing its 6th International eConference (NIPiCON) in association with Indian Pharmacological Society (IPS) as NIPiCON-IPS 2022 on "Emerging Opportunities and Challenges in Pharmacology and Pharmaceutical Sciences for Drug Discovery and Healthcare Innovations" during February 17-19, 2022.

The conference aims to provide networking opportunities to encourage interdisciplinary research in pharmacology, pharmaceutical sciences and healthcare fields so that the country can realize its dream of Atmanirbhar Bharat through healthcare innovations.

I am certain that the conference will provide better opportunities by providing networking platform for research and development initiatives for the advancement of healthcare innovations.

I acknowledge the massive efforts put in by Institute of Pharmacy, Nirma University for organizing this conference and wish them triumph in their endeavour.

Dr. Anup K. Singh
Director General
Nirma University

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Email: dg@nirmauni.ac.in, Website: www.nirmauni.ac.in

Dr. Shivprakash Ratnam

President, IPS

MESSAGE

I am delighted to know that Institute at Pharmacy is organizing its flagship event 6th International Conference (NIPiCON) jointly with Indian Pharmacological Society (IPS) as NIPiCON-IPS 2022 on the theme “Emerging Opportunities and Challenges in Pharmacology and Pharmaceutical Sciences for Drug Discovery and Healthcare Innovations” at Nirma University, Ahmedabad campus from February 17-19, 2022.

I feel that the theme chosen for this conference is very pertinent in the current setting. Interdisciplinary approach in the pharmaceutical sector is prerequisite as it can deliver solutions to the various complex issues related to the pharmaceutical field and health care system.

I hope the conference would prove to be dynamic platform for discussions and knowledge propagation which would result in fruitful collaboration for all those concerned with the healthcare system.

I appreciate the efforts of the Institute of Pharmacy, Nirma University and wish for the success of this glorious event.

Dr. BDP. Kala Kumar

General Secretary, IPS

MESSAGE

I am very elated to know that Institute at Pharmacy has organized its flagship event 6th International Conference (NIPiCON) jointly with Indian Pharmacological Society (IPS) as NIPiCON-IPS 2022 on the theme "Emerging Opportunities and Challenges in Pharmacology and Pharmaceutical Sciences for Drug Discovery and Healthcare Innovations" at Nirma University, Ahmedabad campus from February 17-19, 2022.

I believe that the theme selected is very appropriate considering current circumstances. This conference seems very relevant and necessary. Additionally, there is a basic need for opting an interdisciplinary approach in the pharmaceutical sector so a solution can be found for various complicated matters which are somehow related to the pharmaceutical field and health care system.

I sincerely hope that the conference would invite essential discussions and diverse viewpoints for imparting knowledge. In addition to that, hopefully it will open gates to collaboration within the health care system.

Lastly, I appreciate the efforts of the Institute of Pharmacy, Nirma University and wish for the success of this magnificent event.

Prof. Manjunath D. Ghate
Convener,
NIPiCON-IPS 2022

Dr. Jigna Shah
Organizing secretory
NIPiCON-IPS 2022

NIPiCON-IPS 2022

6th Nirma Institute of Pharmacy International Conference
Jointly organized with Indian Pharmacological Society

"Emerging Opportunities and Challenges in Pharmacology and Pharmaceutical Sciences for Drug Discovery and Healthcare Innovations"

From the Desk of Organizers

With the immense pleasure on behalf of the Organizing Committee, it is our honour to invite all the resource persons, delegates, invitees and students to the NIPiCON-IPS 2022: 6th Nirma Institute of Pharmacy international Conference jointly organized with Indian Pharmacological Society on "Emerging Opportunities and Challenges in Pharmacology and Pharmaceutical Sciences for Drug Discovery and Healthcare Innovations" to be held during February 17-19, 2022 virtually.

Gujarat is at the forefront of the growth in the pharmaceutical industry in India. Accounting for nearly 42 percent share of India's pharmaceutical turnover, 22 percent of its drug exports and 20 percent of its chemicals output, Gujarat's pharmaceutical industry has evolved into an innovation-driven, knowledge-focused industry. Drug discovery and healthcare innovations essentially involves collaborative efforts from the pharmaceutical scientists and healthcare team to meet challenges posed by the complexity as well as a broad spectrum of diseases in this modern era. It is the need of the hour that these scientists from different fields come together to promote a cross culture research environment. The conference intends to provide networking opportunities for different stakeholders of the modern-day healthcare sector i.e., industrialists, physicians, pharmacologists, biotechnologists, and other allied professionals. The conference features expert discussions, plenary and invited sessions from eminent national and international researchers from varied disciplines of healthcare, medical and pharmaceutical field on the emerging trends and corresponding opportunities and challenges for the development of innovative solutions related to healthcare. Interdisciplinary research integrates information, concepts and theories of two or more different specialized disciplines for better scientific understanding and solving of complex challenging problems.

We sincerely wish that the conference will prove fruitful to all the delegates, budding scientists and industry personnel providing them an opportunity for development of interdisciplinary research that integrates pharmacology and pharmaceutical sciences. The conference will put together different minds from several fields including clinicians for encouraging pharmacological discoveries and healthcare innovations for the upliftment of patients' quality of life. The conference will also provide researchers and students to share their research developments and innovative ideas by means of deliberations, discussions as well as oral presentations.

We are deeply thankful to all the international and national resource persons who have consented to be a part of this conference, to interact with the young researchers and aiding a great value in ongoing healthcare research. This challenging and demanding task would not have been possible without the journey voyaged together by the advisory committee, organizing committee and our beloved student volunteers under the valuable support and guidance of management of Nirma University. We also humbly thank Indian Pharmacological Society.

We are extremely thankful to Science and Engineering Research Board (SERB), Department of Science & Technology (DST), Department of Biotechnology (DBT), Defense Research and Development Organization (DRDO), Gujarat State Biotechnology Mission (GSBTM), Gujarat Council on Science & Technology (GUJCOST), Council of Scientific and Industrial Research (CSIR) as well as various sponsors and industries for providing the financial support for the conference.

We warmly welcome you all to NIPiCON-IPS 2022 and look forward for your valuable cooperation and dynamic participation to make this conference a grand success.

Dr. Jigna Shah
Organizing Secretary, NIPiCON-IPS 2022

Prof. Manjunath D. Ghate
Convener, NIPiCON-IPS 2022

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About Nirma University

Nirma University, Ahmedabad has been established in the year 2003 as a statutory university under the Gujarat State Act by the initiative of the Nirma Education & Research Foundation (NERF). The University is a value-driven, research-oriented and student centered not-for-profit institution. Within a short period of its existence, it has emerged as a nationally renowned higher education institution. The University and its constituent institutes are highly ranked by different ranking agencies. The University is recognized by the University Grants Commission (UGC) under section 2(f) of the UGC Act. The achievement of 'A' grade by NAAC by National Assessment and Accreditation Council (NAAC) in November, 2015 once again manifests that the University is committed to Quality Teaching-Learning and Research and is accomplishing the promise by making it the first private university of Gujarat to achieve such honour. Nirma University is a member of the Association of Indian Universities (AIU) and the Association of Commonwealth Universities (ACU). The University has SIRO (Scientific and Industrial Research Organization) recognition from DSIR, Department of Science and Technology, Government of India. Dr. Karsanbhai K. Patel, Chairman, Nirma Group of Companies and Chairman, NERF is the President of the University. Nirma University consists of Faculty of Engineering and Technology, Faculty of Management, Faculty of Pharmacy, Faculty of Science, Faculty of Doctoral Studies & Research, Faculty of Law, Faculty of Architecture and Planning, Faculty of Commerce and Department of Design. The graduate, post graduate, doctoral and post-doctoral level programmes offered by these faculties and planning are rated high by industry, business magazines and by the students. Apart from these, the University also offers several certificate and diploma programmes. Innovation, excellence and quality are the driving forces on the campus and this has translated the vision of these institutions into a reality over a short period of time. The 125-acre sprawling green campus with serene picturesque landscape provides refreshing environment for intellectual and creative activities. Today the campus vibrates with not only world class curricular activities but also with myriad activities like international conventions symposia, conferences, student competitions, conclaves, short-term industry relevant programs, cultural activities, etc. Centre for Advanced Instrumentation (CAI) is sophisticated instrumentation facility with high-end instruments that provides a platform to students to develop their skills in handling latest instruments and is also helpful for pursuing research activities. The facility helps them to carry out cutting edge interdisciplinary research of national and international importance.

About Institute of Pharmacy

Institute of Pharmacy was established in the year 2003 under Nirma University with the aim of developing able professionals in the field of pharmaceutical sciences. In a short span of time, it has become one of the leading institutions in the country, offering pharmaceutical education at the undergraduate, postgraduate, doctoral and postdoctoral level.

Institute has been ranked 20th in India Ranking 2021 by Ministry of Human Resource Development, (MHRD), Government of India in its National Institutional Ranking Framework (NIRF). The institute received 1st rank by GSIRF 2020 with Five Star Rating. The Institute offers B. Pharm, M. Pharm, Full time and External Ph.D. The Institute has adopted Outcome Based Education (OBE) to further advance the development of professional knowledge, inculcate employability skills in addition to development of character and social responsibility. To achieve the same objective, vision and mission of the institute was also defined in line with University's vision and mission. The Institute has also framed its programme educational objectives and programme outcomes. The Institute has more than 5.0 crore rupees grant from government agencies and has collaboration with various research centres and industries. The Institute houses state-of the-art instruments, like supercritical fluid extractor and chromatogram, HPTLC, HPLC, MPLC, GC, Fluorescence Spectrometer, Raman Spectrometer, UV-VIS-NIR Spectrophotometer, FTIR, DSC, ELISA, PCR, Electrophoresis, Texture Analyser, Automated Dissolution Apparatus, Extruder-Spheronizer, Multiple diffusion Assembly, High Pressure Homogenizer, Particle Size Analyser, Microwave synthesizer, Stereotaxic apparatus with Microdialysis, etc. The Institute also has the software, like iWorx, Gold Suit, eCTD, Design Expert, etc.

The Institute has a two-storied animal house facility registered with the Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA), Government of India. Besides, there is also a medicinal plant garden “Nirma Herbal Wealth”, having an area of 3356.5 sqm with around 150 genera and 500 plants. Institute is equipped with Cell Culture Laboratory and Aseptic Laboratory (Class 1000) facilities for advanced research. It also has machine room with manufacturing and testing equipments.

About Indian Pharmacological Society (IPS)

The Indian Pharmacological Society (IPS) was founded in 1969 at Patna with main objectives to integrate pharmacology in medical education and to work for all round development of pharmacology. IPS is ranked among the five largest pharmacological societies of the world. It has a network of branches. They are also actively involved in promoting awareness of recent developments in frontal areas of science as well as organise symposia, conferences and special lectures in the discipline of Pharmacy and Pharmacology.

About Nirma Institute of Pharmacy International Conference (NIPiCON)

The pharmaceutical sciences are a group of interdisciplinary field and profession that are involved with the design, discovery, development, delivery and disposition of drugs. Over the years, pharmaceutical scientists have been instrumental in discovering and developing innovative drugs that can cure various diseases and improve the quality of life.

Nirma Institute of International Conference (NIPiCON) was initiated in year 2013 to offer a common platform for academicians, researchers, industrialists, clinical practitioners and young budding pharmacists to share their ideas, knowledge and research findings which finally emerge with new concepts using interdisciplinary approach in the pharmaceutical field. In the year 2022, the 6th International Conference, NIPiCON 2022 is going to be organize in collaboration with IPS (i.e., NIPiCON – IPS 2022).

About NIPiCON-IPS 2022

Gujarat is at the forefront of the growth in the pharmaceutical industry in India. Accounting for nearly 42 percent share of India's pharmaceutical turnover, 22 percent of its drug exports and 20 percent of its chemicals output, Gujarat's pharmaceutical industry has evolved into an innovation-driven, knowledge-focused industry. Ahmedabad, being the largest city in the state of Gujarat, houses several established companies which have operations in the world's major pharma markets. It will be a great opportunity for scientists, professors, researchers, and students to connect with industry experts during NIPiCON-IPS 2022 conference in Ahmedabad. In February 2022, 6th International Conference, NIPiCON 2022 will be jointly organized with Indian Pharmacological Society (IPS). This aims to provide a common platform for dissemination of multidisciplinary research on the theme of "**Emerging Opportunities and Challenges in Pharmacology and Pharmaceutical Sciences for Drug Discovery and Healthcare Innovations**."

The conference intends to provide networking opportunities for different stakeholders of the modern-day healthcare sector i.e., industrialists, physicians, pharmacologists, biotechnologists, and other allied professionals. The conference will feature expert discussions on the emerging trends and corresponding opportunities and challenges for the development of innovative solutions related to healthcare. Interdisciplinary research

integrates information, concepts and theories of two or more different specialized disciplines for better scientific understanding and solving of complex challenging problems. The conference will provide an opportunity for development of interdisciplinary research that integrates pharmacology and pharmaceutical sciences. The conference will put together different minds from several fields including clinicians for encouraging pharmacological discoveries and inventions for the upliftment of patients' quality of life. The conference features plenary and invited lectures from eminent national and international researchers from varied disciplines of healthcare, medical and pharmaceutical field. The conference will also provide researchers and students to stare their research developments and innovative ideas by means of deliberations, discussions as well as oral and poster presentations.

NIPiCON-IPS 2022 Advisory Committee

- ✓ Dr Shivprakash Rathnam President, Indian Pharmacological Society
- ✓ Dr. Prakash Diwan, Former President, Indian Pharmacological society. Former Founder Director NIPER, Hyderabad. Director Grade Scientist IICT, Hyderabad.
- ✓ Dr Bikash Medhi, Professor, Pharmacology, PGIMER, Chandigarh
- ✓ Dr. R. K. Goyal, Vice Chancellor, Delhi Pharmaceutical Sciences & Research University, New Delhi
- ✓ Dr. Mukul Jain, President , Zydus Research Centre, Cadila Healthcare Ltd
- ✓ Dr. Shyam Sunder Sharma, Professor, Dept. of Pharmacology, NIPER, Mohali
- ✓ Dr. Mallikarjun Rao, Principal, Manipal College of Pharmacy, Manipal
- ✓ Dr B Kalakumar Bharani, General Secretary, IPS, Professor, Veterinary College, Warangal
- ✓ Dr. Suryakant Gupta, Institute for Plasma Research, Gandhinagar

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SCIENTIFIC SCHEDULE OF NIPICON-IPS-2022 AT A GLANCE

Theme: Emerging Opportunities and Challenges in Pharmacology and Pharmaceutical Sciences for Drug Discovery and Healthcare Innovations

DAY 1: FEBRUARY 17, 2022	
11:45 to 12:00	**WEBEX MEETING JOINING**
12:00 to 14:00	**INAUGURATION** **Chief Guest: Dr. Michael Spedding** Secretary General, International Union of Basic & Clinical Pharmacology (IUPHAR) and President, Spedding Research Solutions SAS, France **Title:** IUPHAR And World Health, Databases For Drug Research, Natural Products And Pharmacology: Impact India **President: Shri K. K. Patel** Vice President, Nirma University
14:00 to 14:15	**BREAK**
PLENARY SESSION I Session Chairs: Dr. Varsha Patel & Dr. Kiran Marthak	
14:15 to 15:00	**Dr. Bhushan Patwardhan** National Research Professor, AYUSH, Pune, India **Title:** Emerging Opportunities For Innovations In COVID Times
15:00 to 15:45	**Dr. Alok Dhawan** Director, Centre of Biomedical Research, Sanjay Gandhi Post Institute of Medical Sciences, Lucknow, India **Title:** Nanotoxicology: A Journey From Research To Policy
15:45 to 16:00	**BREAK**
16:00 to 16:45	**Dr. Christoph Thiemermann** Professor, The William Harvey Research Institute - Faculty of Medicine and Dentistry, London, UK **Title:** Emerging Opportunities And Challenges For Drug Discovery And Healthcare

	Innovations: Drug Discovery And Translation In An Academic Setting		
16:45 to 17:30	**Prof. Sukhinder Kaur Cheema** Professor, Department of Biochemistry, Memorial University of Newfoundland, St. John's, Canada **Title:** Marine Bioactives In Health		
17:30 to 17:45	**BREAK**		
INVITED SESSION I			
	Session Chairs Dr. Parloop Bhatt & Dr. Tejal Mehta	**Session Chairs** Dr. Yogesh Kulkarni & Dr. Priti Mehta	**Session Chairs** Dr. Tejal Gandhi & Dr. Hardik Bhatt
17:45 to 18:15	**Dr. Suryakant Gupta** Scientific Officer -G Institute for Plasma Research, Gandhinagar, India **Title:** Emerging Role Of Bioelectric And Plasma Technology In Medical Science	**Dr. Shovan Majumdar** Head, Laser Biomedical Applications Division Raja Ramanna Centre for Advanced Technology, Indore, India **Title:** Photonics for Improved Healthcare	**Dr. Sadhana Sathaye** Professor, Pharmaceutical Sciences and Technology, ICT – Mumbai, India **Title:** Development of Standardized Herbal Ocular Formulation In The Treatment Of Cataractogenesis
18:15 to 18:45	**Dr. Sanyog Jain** Associate Professor, Pharmaceutics, National Institute of Pharmaceutical Education and Research (NIPER), Mohali, India **Title:** Synergistic Anticancer Efficacy Using Combination Drug Therapy Approach	**Dr. Evans Coutinho** Professor, Dept. of Pharmaceutical Chemistry, Bombay College of Pharmacy, Mumbai, India **Title:** EigenValue ANalySis (EVANS): A Powerful In-Silico Tool To Accelerate Drug Discovery and Development	**Dr. M. N. Saraf** Professor & Principal, Humera Khan College of Pharmacy, Mumbai, India **Title:** Connect The dots: A Preclinical Drug Development In Academia

DAY 2: FEBRUARY 18, 2022

08:45 to 09:00	**WEBEX JOINING**		
PLENARY SESSION II Session Chairs: Dr. Chetna Desai & Dr. Bharat Doshi			
9:00 to 9:45	**Dr Anil Gulati** Emeritus Professor, Midwestern University, USA **Title:** Sovateltide A Promising Drug Substance For Cerebral Stroke		
9:45 to 10:30	**Dr. Sanjay Garg** Professor, Pharmaceutical Sciences, University of South Australia, Adelaide, Australia **Title:** The Birth Of A New Contraceptive, From Concept To US FDA Approval And Market		
10:30 to 10:45	**BREAK**		
INVITED SESSIONS II			
	Session Chairs Dr. B. Kalakumar & Dr. Niyati Acharya	**Session Chairs** Dr. Indermeet Singh Anand & Dr. Charmy Kothari	**Session Chairs** Dr. Shrikalp Deshpande & Dr. Mayur Patel
10:45 to 11:15	**Dr. Neelima Chauhan** Associate Professor, Department of Biochemistry and Molecular Genetics, Chicago, USA **Title:** Neurologic Music Therapy	**Dr Tapas Das** Head, Radio Pharmaceutical Programme in BARC, DAE, India **Title:** Radiopharmaceuticals: Magical Probe For Diagnosis	**Dr. Raj Sevak** Assistant Professor, University of the Pacific, CA, USA **Title:** Effects Of Gabapentinoids On Postoperative Pain And Opioid Consumption In Patients That Underwent A Spinal Surgery
11:15 to 11:45	**Dr. A. K. Chakraborti** School of Chemical Sciences, Indian Association for the Cultivation of Science (IACS), Kolkata, India	**Dr. Shreedhar Narayanan** Director, Chief Executive Officer and Chairman of Board, Foundation for Neglected Disease Research (FNDR), Bangalore, India	**Dr. Rory E. Kim** Assistant Professor of Clinical Pharmacy Director, PharmD Scholarly Project USC School of Pharmacy,

	Title: New Drug Discovery In The Context Of Sustainable Development	**Title:** A One-Health Approach To Antimicrobial Resistance	USA **Title:** Beyond 100: The Therapeutic Use Of Concentrated Insulin For The Treatment Of Severe Insulin Resistance
PLENARY SESSION III Session Chairs: Dr. Chirag Shah & Dr Amit Joharapurkar			
11:45 to 12:30	**Dr. Padma Devarajan** Professor, Pharmacy, Institute of Chemical Technology, Mumbai, India **Title:** Designer Nanoparticles For Targeted Delivery - A Serendipity		
12:30 to 13:15	**Dr. Prakash Diwan** Director Grade Scientist, IICT, Hyderabad, India **Title:** Nanotechnology In Health Care - Its Impact And Concern: The Next Big Thing Is Really Too Small		
13:15 to 13:45	**BREAK**		
13:45 to 16:45	**ORAL PRESENTATION**		
PLENARY SESSION IV Session Chairs: Dr. Sunita Goswami & Dr. Pallab Bhattacharya			
16:45 to 17:30	**Dr. Dhiraj Kabra** Deputy General Manager, Sun Pharma Advanced Research Company, Vadodara, India Title Improving Research Practices in Preclinical Pharmacology with an Emphasis on Quality Aspects		
17:30 to 18:15	**Dr. Stephen Amato** Teaching Professor, North eastern University, USA **Title:** Use Of Real-World Evidence In Biopharmaceutical Regulatory Decision Making		
18:15 to 19:00	**Dr. Vinay Parikh** Associate Professor, Psychology and Neuroscience, Philadelphia, Pennsylvania, USA **Title:** Accelerating The Development Of Cognition Therapeutics For Age-Related Neurodegenerative Disorders Through Predictive Biomarkers		

DAY 3: FEBRUARY 19, 2022

8:45 to 9:00	WEBEX JOINING		
PLENARY SESSION V Session Chairs: Dr. Nilima Kshirsagar & Dr. Gaurang Shah			
9:00 to 9:45	**Dr. Devendra Agrawal** Senior Vice President for Research & Biotechnology, and Professor at Western University of Health Sciences, USA **Title:** Pathological Features of Rotator Cuff Tendon Injury: Potential Treatment Strategies To Enhance Healing Response		
9:45 to 10:30	**Dr. Ramesh K. Goyal** Vice Chancellor, Delhi Pharmaceutical Sciences & Research University, New Delhi, India **Title:** 21 Revolutions Of The 21st Century In Pharmaceutical Sciences		
10:30 to 11:15	**Dr. S. S. Sharma** Professor, Department of Pharmacology, National Institute of Pharmaceutical Education and Research (NIPER), Mohali, India **Title:** Elucidation Of Involvement Of Oxidative Stress And Redox Sensitive Transient Receptor Potential (TRP) Channels In Diabetic Neuropathy Using Pharmacological Approach		
11:15 to 12:00	**Dr. Bikas Medhi** Professor, Department of Pharmacology, Post Graduate Institute of Medical Education and Research (PGIMER), Chandigarh, India **Title:** Drug Development For Autism Spectrum Disorder: How To Validate Experimental Models And Futuristic Approach		
12:00 to 12:30	**BREAK**		
INVITED SESSION III			
	Session Chairs Dr. Sharad Gupta & Dr. Shital Butani	**Session Chairs** Dr. Sailendra Goswami & Dr. Manjunath Ghate	**Session Chairs** Dr. Rakesh Rawal & Dr. Jigna Shah
12:30 to 13:00	**Dr. Ajay Srivastava** Chief Scientific Officer, Vets plus Inc., USA **Title:** Pharmacology Of Drug Resistant	**Dr. Marco Lolli** Professor, Department of Medicinal Chemistry, University of Torino (UniTo), Italy **Title:** Targeting Acute Myelogenous Leukemia And COVID-19 Using	**Dr. Vijay. L. Kumar** Professor and Head, Department of Pharmacology, AIIMS, New Delhi, India **Title:** Newer Models For Preclinical Drug Testing

	Epilepsy	Potent Human Dihydroorotate Dehydrogenase Inhibitors Based On The 2-Hydroxypyrazolo[1,5-A] Pyridine Scaffold: From Academy To Clinic	
13:00 to 13:30	**Dr. Anuradha Majumdar** Dean, Faculty of Science and Technology, University of Mumbai, Mumbai **Title:** Transcending Brain Bioavailability Limitations Of Flurbiprofen With Nose To Brain Delivery Strategy	**Dr. Kanan Shah** Product development and research, Alphamed Pty. Ltd., Auburn, Australia **Title:** "Wellness Redefined"-Emerging Opportunities For Multi-Herbal Preparations In Australia: Scope And Regulations	**Dr. Sanjib Bhattacharya** Professor, Department of Pharmaceutical Science and Chinese Traditional Medicine, Southwest University, China **Title:** Nanoscale Modulation Of The Neurodegenerative Disease
13:30 to 14:00	**Dr. Dino Rotondo** Deputy director and senior lecturer in Immunology, Strathclyde, Institute of Pharmacy & biomedical sciences, University of Strathclyde, Glasgow, UK **Title:** Fatty Acids As Therapeutic Agents In The Control Of Immunity And Infection	-	-
14:00 to 15:00	**PANEL DISCUSSION** **COVID – 19: Vaccine Development & Pharmaceutical Challenges** Dr. D. K. Dhawan, Dr. Mukul Jain, Dr. C. Mallikarjun Rao Dr. Shivprakash Rathnam		
15:00 onwards	**VALEDICTORY FUNCTION** **Chief Guest: Dr. Ingolf Cascorbi**		

	President, International Union of Basic & Clinical Pharmacology (IUPHAR), Germany and Professor, Institute of Experimental and Clinical Pharmacology, UKSH, Germany **Guest of Honour: Dr. Y. K. Gupta** President, AIIMS, Bhopal, India and AIIMS Jammu and Former Dean AIIMS Delhi **Title:** Application Of Pharmacogenomics In Psychiatric Practice **President: Dr. Anup Singh** Director General, Nirma University, Ahmedabad

Main Tracks and Sub-Tracks of Conference

Basic Pharmacology

- Preclinical Evaluation
- PKPD
- Toxicology and Toxicokinetics
- Pharmacogenetics and Pharmacogenomics
- Environmental Pharmacology
- Veterinary Pharmacology

Clinical Research and Pharmacovigilance

- Clinical research
- Clinical Data Management
- Pharmacoepidemiology and Pharmacovigilance
- Medical Devices and Diagnostic Tools
- Pharmacoeconomics and health outcome research
- Antimicrobial resistance

Molecular Pharmacology

- Cell Biology Research
- Peptide Therapeutics
- Biotechnology Derived Products
- Biologics and Therapeutics
- Marine Biotechnology and Drug Research
- System Biology specific to Genomics, Proteomics, etc.

Natural Products Pharmacology

- Phytopharmacology and phytopharmaceuticals in Drug Discovery
- Isolation and Standardization of Phytopharmaceuticals
- Functional Foods and Nutraceuticals
- Herbal Wealth Product Development

Pharmaceutics and Pharmaceutical Technology

- Pharmaceutics, Pharmacokinetics and NDDS
- Targeted drug delivery System
- Nanotechnology and Material Science
- Bio-nanotechnology and Agricultural Biotechnology Research
- Cosmetics

Pharmaceutical Chemistry

- Synthetic and Medicinal Chemistry
- Biochemistry, Chemical Biology and Bioinorganic Chemistry

- Structural Biology and Bioinformatics Research
- Green Chemistry Approach in Chemistry

Pharmaceutical Analysis and Quality Assurance

- Pharmaceutical Analysis of Drug and Related Products
- Quality Control of Pharmaceuticals and Nutraceuticals
- Stability Studies of Pharmaceuticals

Modern healthcare challenges and opportunities

- Artificial intelligence
- Orphan diseases
- Nuclear Medicine
- Covid 19
- Antimicrobial resistance
- GCP and GLP

INAUGURATION

Chief Guest: Dr. Michael Spedding

IUPHAR And World Health, Databases For Drug Research, Natural Products And Pharmacology: Impact India

Michael Spedding, PhD

Secretary General IUPHAR, President, Spedding Research Solutions SAS, 6 Rue Ampere, Le Vesinet, 78110, France.

BIODATA

Michael SPEDDING, PhD, HonFBPhS. Michael is Secretary General, International Union of Basic and Clinical Pharmacology and President of Spedding Research Solutions SAS (Paris), working on 'impossible' diseases, amyotrophic lateral sclerosis (ALS) and COVID-19, developing a generic drug for ALS. He was chair of NC-IUPHAR from 1990-2015, growing this to 90 subcommittees of 860 expert scientists contributing to the IUPHAR/BPS guidetopharmacology.org, a freely available knowledgebase on all drug targets. IUPHAR and IUIS contribute to a new guidetoimmunopharmacology. He has a long career in pharmaceutical industry, with twelve compounds into Phase I, one to market; 3 'assists' of marketed drugs. Michael obtained his BSC, PhD and lectured at Sunderland, then 8 years at Merrell Dow research in Strasbourg (calcium channels), then Director at Syntex, Edinburgh, then set up Servier's CNS centre (Paris, and later a Budapest centre for medchem). >230 publications, >20 patents, Clarivate's 3000 most-cited scientists (all disciplines), h-index: 68. Michael has been a competitive athlete for 60 years (>122,000 kms run) and is interested in how evolution and the trophic/inflammatory interface favours, or stops, such activity. To conteract age-related slowing, he also does entry-level car racing (club Lotus).

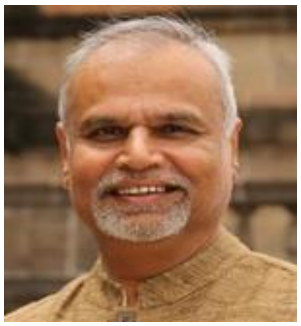
ABSTRACT

Therapeutic research and healthcare will be profoundly changed by the SARS-CoV-2 virus. The IUPHAR website (https://iuphar.org/) shows how pharmacological societies have supplied expert advice to their respective governments. The nomenclature committee of IUPHAR (NC-IUPHAR) has listed all sites for drug action (https://guidetopharmacology.org) for COVID-19, and also generally for drug discovery. More than 700 scientists have contributed to articles (H-index 80) and databases in immunopharmacology, and natural products, and now malaria pharmacology (www.guidetomalariapharmacology.org) financed by Gates/Medicines for Malaria Venture. This approach can now be applied to many diseases, such as Dengue or Zika, coupled with education in

pharmacology (www.pharmacologyeducation.org). Whereas the rapid production of COVID-19 vaccines has been a success, drugs have been less effective (exception, dexamethasone in RECOVERY trial) despite >91,000 articles on SARS-CoV-2 in Pubmed, almost 2000 agents with in vitro activity against SARS-CoV-2, and 6000 clinical trials listed in ClinicalTrials.gov (cost~6bn$). Why? The highly lipophilic and basic nature of many these agents can cause phospholipidosis, as they accumulate massively in cell membranes, and SARS-CoV-2 enters via ACE2 and lipid rafts, then creates its lipid envelope in endoplasmic reticulum membranes. Thus agents such as chloroquine may work *in vitro*, but are much less effective *in vivo*. Cell membrane lipids (sphingolipids) and sugars are critical for viral envelopes and for viral recognition and natural product iminosugars may be the starting points for new generations of drugs, as well as retargeting generic agents for new indications. IUPHAR has specific collaborative projects for healthcare in India.

PLENARY & INVIVED SESSIONS

Emerging Opportunities For Innovations In COVID Times



Dr. Bhushan Patwardhan, PhD, FNASc, FNAMS

National Research Professor, AYUSH, Pune, India

BIODATA

Dr Bhushan Patwardhan is a National Research Professor – Ayush at Interdisciplinary School of Health Sciences, Savitribai Phule Pune University. He was Vice Chairman, University Grants Commission and Chairman Indian Council of Social Science Research, member of several academic research and policy committees such as NITI Aayog, Planning Commission, Lancet Citizen's Commission, National Board of Examination, United Nations, World Health Organization Geneva. He is Fellow, National Academy of Sciences and National Academy of Medical Sciences (India) and Founder Editor-in-Chief, Journal of Ayurveda and Integrative Medicine published by Elsevier. Recipient of several orations, awards, holds 8 Indian, 2 US Patents, 175+ scientific publications and 10,500+ citations.

ABSTRACT

The new drug discovery especially of small molecules is facing a serious innovation deficit. Reverse pharmacology-based drug discovery, development and repurposing can play an important role in offering promising candidates, especially antivirals and immunomodulators. Various in silico, pre-clinical and clinical studies on traditional medicines are in progress in India. COVID-19 therapeutics needs safer drugs to treat infections, immunological and mental health problems. Search for effective drugs for chemoprophylaxis and therapeutics against SARS-CoV-2 is in progress however no proven drugs are available yet. The Ministry of AYUSH has supported large-scale population-based surveys, observational studies and randomized controlled clinical trials to scientifically validate effectiveness of Ayurvedic medicines in prophylaxis and clinical management of COVID-19. Over 100 clinical trials on AYUSH interventions have been registered on CTRI, which include prophylaxis, adjunct/ add-on treatment and standalone therapies for COVID-19. Pre clinical studies have shown considerable anti-viral activity of few promising medicinal plants. Ayurveda based immunomodulators such as Ashwagandha, Guduchi, Pippali, Yashtimadhu, and AYUSH 64 have shown beneficial effects as prophylaxic agents and as an add-on in the standard care for mild to moderate cases of COVID-19. This lecture will offer few glimpses of ethnopharmacology research in COVID times in India.

Nanotoxicology: A Journey From Research To Policy

Dr. Alok Dhawan

Director

Centre of Biomedical Research, Sanjay Gandhi Post Institute of Medical Sciences, Lucknow, India

BIODATA

Professor Alok Dhawan is currently Director, Centre of BioMedical Research, Lucknow. Previously he served as Director, CSIR-Indian Institute of Toxicology Research, Lucknow (2015-2020). He was the Founding Director, Institute of Life Sciences, and Dean, Planning and Development, Ahmedabad University, Gujarat. He obtained his Ph.D. Degree in Biochemistry from University of Lucknow, India in 1991 and was awarded D.Sc. Degree (h.c.) by the University of Bradford, U.K. in 2017. Professor Dhawan developed several areas at CSIR-IITR namely, Genetic Toxicology, In-vitro Toxicology, Alternate to Animal Models in Toxicology, In-silico Toxicology and Nano-material Toxicology apart from an innovation ecosystem. Professor Dhawan has also contributed extensively in establishing a framework of risk assessment of fragrance materials. He set up a state-of-the-art Nanomaterial Toxicology facility at CSIR-IITR and contributed towards framing the national guidelines for Nanopharmaceuticals and Nano-Agri products apart from others. In recognition of his work he has been conferred several honours and awards and Elected Fellow, The National Academy of Sciences, India (NASI); Fellow, The Academy of Toxicological Sciences, USA (ATS); Fellow, Royal Society of Chemistry; Fellow, National Academy of Medical Sciences (NAMS); Fellow, Gujarat Science Academy; Fellow, The Academy of Environmental Biology; Fellow, Academy of Science for Animal Welfare; Fellow-Society of Toxicology (India), Founder, Indian Nanoscience Society; Honorary Fellow, Biotech Research Society, India (2018); President, Society of Toxicology (STOX), India (2018-), President, Uttar Pradesh Academy of Sciences (2016-) Vice President-Environmental Mutagen Society of India (2006-07). He has to his credit more than 150 publications, 20 reviews/book chapters, seven patents, six copyrights and has edited eleven books.

ABSTRACT

Nanotoxicology is a study of the toxicity of nanomaterials. The studies determine whether and to what extent the nanomaterials impact the environment and human beings. While assessing the toxicity of engineered nanomaterials (ENMs), various properties of ENMs such as size, shape, surface area, coatings, stability, etc. need to be considered. Depending on the ENM and its intended use, the appropriate model needs to be identified to assess its toxicity. This allows for hazard identification as well as an appropriate risk assessment. I shall present the progress made in this regard as well share the guidelines that have now been published in India, both for the safety assessment of nanopharmaceuticals[1] as well as for the nano-based agri-input and food products[2].

1. https://dbtindia.gov.in/sites/default/files/uploadfiles/Guidelines_For_Evaluation_of_Nanopharmaceuticals_in_India_24.10.19.pdf
2. https://dbtindia.gov.in/sites/default/files/Guidlines%20Document.pdf

Emerging Opportunities and Challenges for Drug Discovery and Healthcare Innovations: Drug Discovery and Translation in an Academic Setting

Dr. Christoph Thiemermann

Professor, The William Harvey Research Institute - Faculty of Medicine and Dentistry, London, UK

BIODATA

Chris(toph) Thiemermann is Professor of Pharmacology and Centre Lead for Translational Medicine & Therapeutics at the William Harvey Research Institute(WHRI), Queen Mary University of London (QMUL) and Deputy Director of the Centre for Diabetic Kidney Disease at the Royal London Hospital, Bart's Health NHS Trust. He received consecutive Fellowships from the Deutsche Forschungsgemeinschaft (DFG) and the Thyssen Foundation (Germany) to join the WHRI in July 1987, where he obtained a PhD in Pharmacology under the supervision of The Nobel Laureate Sir John Vane in 1991. Thiemermann is a Scientist/Clinician with a strong research track record in cardiovascular disease (acute medicine, trauma & shock, renal disease) with a specific expertise in target discovery, pharmacology and translational medicine. Since 2007, he is Centre Lead for Translational Medicine at the WHRI/Barts NHS Trust and (since 2015) Deputy Director of the Centre for Diabetic Kidney Disease at Bart's Health NHS Trust. Recent successes have been phase II RCTs evaluating the effects of pentoxiphylline in patients with chronic kidney disease (on dialysis) and the repositioning of the antimalarial drug artesunate for patients with trauma and severe haemorrhage (TOP-ART). His research was recognised by Awards of the British Pharmacological Society (1994), the Surgical Infection Society Europe (1999) and the Menarini-Award for CV Research (2001) the National Student Survey) is the best degree in Pharmacology in the UK, and serves as a mentor for students and staff within QMUL, the Academy of Medical Sciences and the NIHR. As a Scientist, he has published more than 470 scientific articles in peer-reviewed scientific journals, which have been cited more than 34,000-times (h-index:96, i10-index: 365; Google Open Scholar).

ABSTRACT

In this talk, I will share my views and reflections on some Emerging Opportunities and Challenges for Drug Discovery and Healthcare Innovations with a particular focus on Drug Discovery and Translation in an Academic Setting. The latter is more likely achievable by using existing medicines for a new disease indication and this strategy is known as repurposing. Examples of the repurposing of drugs for other indications include COVID-19 (which in 2022 needs no introduction), sepsis and trauma. Severe injuries account for 9% of the deaths worldwide. Although guidelines for the early management of hemorrhagic shock (HS) have decreased the rates of early deaths, post-injury multiple organ failure (MOF) is still associated with significant morbidity and mortality. To date, there are no specific pharmacological interventions used clinically to prevent MOF following/associated with HS/COVID/Sepsis. This talk summarises our preclinical efforts, explains the regulatory steps that are necessary for clinical translation and provides one example of the translation of a preclinical discovery to a phase II clinical trial in patients with trauma and severe haemorrhage.

Marine Bioactives in Health

Prof. Sukhinder Kaur Cheema

Professor, Department of Biochemistry, Memorial University of Newfoundland, St. John's, Canada

BIODATA

Dr. Sukhinder K Cheema is a Professor and Deputy Head of Graduate Studies at Department of Biochemistry, Memorial University, Canada. Dr. Cheema's research focuses on investigating the molecular mechanisms by which nutrients and dietary fats regulate metabolic pathways, under normal and pathological conditions. She has published over 60 papers in high impact international peer-reviewed journals, and has presented over 100 papers nationally and internationally. Dr. Cheema's research findings on developmental origins of health and disease have attracted editorial focuses. Her latest publication in PLoS One has revealed for the first time that maternal omega-3 polyunsaturated fatty acids induce changes in novel bioactive lipids

that are likely responsible for eliciting beneficial health effects, and may be used as a novel biomarker in cardiovascular disease. She has been invited internationally to present her research findings. She was awarded the Japanese Society for the Promotion of Science Scholar award to initiate a collaborative study in Japan on the health benefits of flaxseed oil in metabolic syndrome and other metabolic disorders. Her recent research has focused on studying the importance of maternal dietary fats in fetal programming and nutrient-gene interaction to regulate metabolic pathways involved in cardiovascular disease - she is one of the leading scientists in Canada in this area.

ABSTRACT

The overall objective of my talk is to make the audience aware of novel bioactives found in marine biomass that can be exploited as pharmaceuticals and nutraceuticals for better health. Marine flora and fauna are rich sources of bioactive compounds that provide several health benefits. The cold waters of the Atlantic Ocean surround the province of Newfoundland & Labrador (NL) in Canada. The marine species surviving and thriving in these cold waters have unique composition, including novel lipids and other bioactives. My research focuses on novel marine bioactives in health, as it relates to obesity, diabetes, heart disease, cancer, and brain health. We found that blue mussels and sea cucumber contain phospholipids based omega-3 fatty acids that are highly bioavailable, compared to triglyceride based omega-3 fatty acids from fish. Both blue mussel and sea cucumber gut powder showed anti-obesity and lipid lowering properties in in-vitro as well as in animal models. We also extracted shrimp waste/by-product that showed a high content of omega-3 fatty acids, and astaxanthin, which is a highly potent anti-oxidant. Shrimp oil extracts provided anti-oxidant and anti-obesity properties. We are working with several marine species/biomass/by-products from NL to extract novel bioactives to be used as pharmaceuticals or nutraceuticals.

Emerging Role of Bioelectrics and Plasma Technology in Medical Science

Dr. Suryakant Gupta

Scientific Officer -G Institute for Plasma Research, Gandhinagar, India

BIODATA

Dr.-Ing. Suryakant B, Gupta has obtained Master's degree in electronics and communication and MBA degree from DAVV Indore. He has obtained PhD degree in information and communication technology from KIT, Germany. He has more than 30 years of research experience with prestigious national and international scientific laboratories of Department of Space, Department of Atomic Energy, Government of India and Forschungszentrum Karlsruhe, Germany. During 2006 – 2008 he has served as a member, Board of Directors of International Ozone Society, Paris France, member, Executive council, European Pulsed Power Society and founder Executive committee member of Indian Society of Particle Accelerator [ISPA]. He has published more than 80 research papers in various international Journal and conference proceedings. He also contributes as a reviewer of several domestic and international scientific funding agencies. He is affiliated to many national and international scientific and technical societies and delivered more than 60 invited talks. He is a fellow of IETE, and Nodal officer-HBNI. He is a member of Board of Studies and Faculty of Technology, Nirma University Ahmadabad and Board of Studies Kadi University Gandhinagar. He has served as a guest editor of IEEE Transactions on Dielectrics and Electrical Insulation. He is a nominated member to the sub-committees of LEO, MEO, GEO and Lunar Environments & Laboratory Simulation of Space Environment of the of American Institute of Aeronautics and Astronautics (AIAA) and country coordinator for The Real World Design Challenge, USA. Presently he is working as Scientific Officer-G at Institute for Plasma Research, Gandhinagar.

ABSTRACT

When ultra-short high voltage pulses are applied to biological cells then either due to formation of non-thermal plasma or due to generation of shock waves, membrane of biological cell gets modified. During this process if pulsed voltage is applied in a controlled manner then reversible or irreversible pores can be created in the cell membrane which can lead to formation of hydrophilic transportation channels between cytoplasm and the external environment. This technique is known as a Bioelectrics. Bioelectrics is an interdisciplinary field spread over physics, chemistry, biology, medical science, agriculture and pulsed power engineering. In this talk along with brief introduction, emerging role of Bioelectrics and Non-Thermal Plasma in Medical Science will be presented.

Photonics for Improved Healthcare

Dr. Shovan Majumdar

Head, Laser Biomedical Applications Division Raja Ramanna Centre for Advanced Technology, Indore, India

BIODATA

Dr. Shovan Kumar Majumder is a senior Scientist at Raja Ramanna Centre for Advanced Technology (RRCAT), a Department of Atomic Energy unit and Professor at Homi Bhabha National Institute (HBNI), a deemed to be university of Department of Atomic Energy. He heads the Laser Biomedical Applications Division of RRCAT. Dr. Majumder received his graduate and postgraduate degrees in Physics from Jadavpur University, Kolkata. After successful completion of one-year Orientation Course from Bhabha Atomic Research Centre (BARC) Training School, Mumbai, he joined RRCAT in 1992. Dr. Majumder received his Ph.D. degree from the Devi Ahilya Vishwavidyalaya (DAVV), Indore for his work on the use of Optical Spectroscopy for Cancer Diagnosis. He worked as a Visiting Scientist at Vanderbilt University, USA where he did his post doctoral work. Dr. Majumder's research interest primarily focuses on development and evaluation of optical spectroscopy and imaging for biomedical diagnosis. His extensive research not only led to the development of a variety of new techniques required for advancing the applications of optical spectroscopy for biomedical diagnosis, but also made it possible to perform non-invasive screening of oral neoplasia and automated diagnosis of tuberculosis in resource-limited clinical settings using photonics-based point-of-care instruments developed in his group. Dr. Majumder is the recipient of several awards which include "Raman Bhagat Memorial Award of Excellence" of Cancer Care India, "Swargiya Dadasaheb Kalmegh Smruti Award" of Famdent, "Homi Bhabha Science and Technology Award" of the Department of Atomic Energy, Two "Group Achievement Awards" of Department of Atomic Energy, "Young Physicist Award" of the Indian Physical Society, "IPG Eminent Scientist Award " of the IPG Innovative Pharmacist Group, "The Excellence Award " of the Rotary Club among others.

ABSTRACT

Even though human being mastered the art of harnessing the power of light long ago, it is in the last couple of decades that photonics – the technology of light – has made giant strides. Endowed with the inherent advantage of being easily integrated easily into various electronic and machine learning platforms, it is no wonder that photonics is garnering tremendous interest in recent years in developing improved healthcare solutions. In fact, a vast body of studies on the interaction of light and biological materials have made it possible to develop an understanding of a wealth of disease conditions and also resulted in, over the years, various photonics-based therapeutic and diagnostic tools. The talk will focus on the importance of photonics in healthcare, basic principles of various photonics based techniques and how they apply to biomedical diagnosis and therapy. It will also provide a snapshot of the representative results of the studies being pursued in our group at RRCAT on the development and use of photonics based techniques for biomedical diagnosis and therapy and discuss about our efforts that resulted in compact, portable and easy-to-use point-of-care devices for various diagnostic and therapeutic applications.

Development of Standardized Herbal Ocular Formulation in the Treatment of Cataractogenesis

Dr. Sadhana Sathaye

Professor, Pharmaceutical Sciences and Technology, ICT – Mumbai, India

BIODATA

Dr. Sadhana Sathaye is an eminent research scientist working in the field of pharmacology and toxicology with an academic experience of 31 years. She is working at Institute of Chemical Technology, Mumbai, India, since 1998. She has also worked as visiting scientist at Department of Biological Science, University of Delaware, USA from July 2011 –April 2012. Consultant to the pharmaceutical industry in India for planning, implementation, execution and management of selected pre-clinical and clinical studies as per OECD and Schedule 'Y' guidelines for DCGI submission. The, overreaching fields of her research encompass various neurological disorders like epilepsy, Parkinson's and Alzheimer's disease as well as metabolic disorders like diabetes mellitus and related complications. The research focuses on establishing novel therapeutic interventions by exploring herbs and modern medicinal drugs. She has over 80 national and international publications to her credentials and has been a renowned speaker in several esteemed national and international conferences. Her horizon is not limited to academia but also as a consultant to the Global pharmaceutical industry where she extends her services in regulatory toxicity studies and Pharmaco-dynamic evaluation.

ABSTRACT

Cataract is characterised by the opacification of the lens which is one of the prominent causes of blindness in the world. Currently, surgery is the only available treatment for cataract. However, due to high cost of surgical intervention, lack of advanced healthcare infrastructure, poor post-surgical visual acuity, and lack of qualified ophthalmic surgeons; sustainable therapy for cataract remains a major concern. The end result of cataract is blindness. Several risk factors such as metabolic disorders, aging, steroids, nutritional deficiency, smoking, radiations, etc. aggravate the progression of cataractogenesis. Owing to its multifactorial nature, the explicit therapeutic targets and the comprehensive pathophysiology is undetermined. One of the main risk factors of cataract, UV rays, cause photochemical damage to the crystalline lens which can persist for a long time, causing temporary or permanent impairment of vision leading to UV-induced cataract. Numerous studies postulates that oxidative stress to the lens mediated by reactive oxygen species (ROS) and lipid peroxides as a result of UV-radiation, produced in the crystalline lens can initiate the process of cataractogenesis. In the field of translational medicine the practice of natural products and phytochemicals has increased tremendously in the past few decades. The previous studies conducted on, Saraca asoca in our laboratory at ICT, provides essential proof related to the use of ethyl acetate fraction of its flowers (EASA) for the treatment or prevention of cataract. This presentation will highlight the development of a standardized ocular formulation (eye drops) containing EASA as active and its evaluation for the prevention and treatment of UV-induced cataract using appropriate research modalities and systems like bioinformatics, molecular docking, in-vitro assays, ex-vivo experimentation, and in-vivo preclinical animal studies.

Synergistic Anticancer Efficacy Using Combination Drug Therapy Approach

Dr. Sanyog Jain

Associate Professor, Pharmaceutics, National Institute of Pharmaceutical Education and Research (NIPER), Mohali, India

BIODATA

Dr. Sanyog Jain is working as Professor at Centre for Pharmaceutical Nanotechnology, Department of Pharmaceutics of National Institute of Pharmaceutical Education and Research (NIPER), Mohali (Punjab), India. His key research interest includes exploring anticancer drug delivery, oral delivery of vaccines, peptides and therapeutics, co-encapsulation of high dose drugs especially antioxidants, topical and transdermal drug delivery, gene delivery and carbon nanotubes. He has patented several nanotechnology based drug delivery platforms and licensed Tamoxifen-SEDDS Technology for improved breast cancer therapy to industry for commercialization. Dr. Jain is inventor of 16 patents out of which 11 patents are already granted. He has authored 2 books, 11 book chapters and published over 200 research papers in high impact international journals (h-index 55) with over 10400 citations. He is Editor/Editorial Advisory Board Member of few international journals like Molecular Pharmaceutics, AAPS Pharm SciTech, Drug Delivery and Translational Research and Biomed Research International.

ABSTRACT

Cancer nanotechnology is often considered to be a vast field that comprises of multidisciplinary aspect of science, engineering and medicine. This arena of technology not only aids in detection and prevention of cancer but also helps in generating effective and personalized medicine. The primary focus shifted towards this field with the observation of anti cancer drugs showing poor oral bioavailability and higher side effects accompanying extra therapeutic toxicity due to lack of targeting. Moreover, the damage that occurs to normal cells includes genetic material damage via elevated oxidative stress. Arena of cancer nanotechnology holds fascinating techniques to address these problems. Smart nanocarriers are able to specifically target tumor once they are into the systemic circulation. This leads to reduced side effects related to cancer chemotherapy, although the approach to co-deliver an antioxidant with the anticancer drug further improves the therapy in controlling chemotherapy related distress. This improves the overall effectiveness of therapy. Nanotechnology provides various techniques for improving oral bioavailability since this route of administration remains to be the most popular route for patients. Nanocarriers holds answer to all these questions of targeted co-delivery of drugs through oral or other preferred routes. Thus this improvised technique provides the benefit of targeting with efficient multicomponent delivery which leads to effective cancer chemotherapy.

The present talk deals with all these aspects of cancer nanotechnology with emphases on the development of smart nanocarriers for effective cancer chemotherapy. The talk will take through the challenges in developing smart nanomedicines with answers to tackle them efficiently.

EigenValue ANalySis (EVANS): A Powerful In-Silico Tool to Accelerate Drug Discovery and Development

Dr. Evans Coutinho

Professor, Dept. of Pharmaceutical Chemistry, Bombay College of Pharmacy, Mumbai, India

BIODATA

Dr. Evans Coutinho is a visiting professor at Bombay College of pharmacy working in Department of Pharmaceutical Chemistry. He has total 30 years of research experience with 136 international papers and 30 national papers. He has 2 patents granted and several industrial consultancy projects from companies like (Spring Bank Pharmaceuticals USA; BASF, Germany; Alchem Synthon, India; USV Ltd. India; Biocon Limited, India; AstraZeneca India Pvt. Ltd, etc.) He has several awards, honours and distinction wherein he is a Member of the Governing Body of Aldel Education Trust, 2015 to present. He is also a member of CEC of Indian Pharmaceutical Association (IPA) 2018-2019 and member of advisory Board of Indian Journal of Pharmaceutical Sciences, April 2016 to present. He has received Cipla Distinguished Fellowship in Pharmaceutical Sciences, 2003. Apart from this he has received several awards and fellowships throughout his career. He has total 16 Govt grands received and 9 industrial sponsored grants to his credit.

ABSTRACT

Drug discovery is a continuously evolving area, essential for mankind albeit a very expensive process with a high attrition rate. The main challenge faced by pharmaceutical researchers today is to identify the major hurdles and validate the “developability” of a compound in the initial stages of drug development to select superior drug candidates with the best chances of success. This motivated us to introduce a “universal” approach for analyzing the pharmacodynamics, pharmacokinetics, toxicity, and permeability profiles of compounds based on the philosophy of QSAR. The present work deals with the development, validation, and application of a QSPR formalism entitled EigenValue ANalySis(EVANS). This methodology encodes 3D structural information in terms of the atom pair distances along with molecular physicochemical properties to generate a set of unique hybrid descriptors, termed as “Eigenvalues.” The present work outlines the intricacies of the methodology and explores its applicability on chemically and biologically diverse datasets.

Connect the Dots: a Preclinical Drug Development in Academia

Dr. Madhusudan Saraf

Professor & Principal, Humera Khan College of Pharmacy, Mumbai, India

BIODATA

Dr. Madhusudan N. Saraf is Dean , Principal &Professor of Pharmacology, Humera Khan College of Pharmacy, affiliated to the University of Mumbai. He also served as Principal of the Bombay College of Pharmacy which is a premier Government Aided Autonomous Pharmacy Institution & as Associate Dean at School of Pharmacy, NMIMS University.He has 38 years of Teaching & research experience. He has 76 research publications to his credit. He has held several assignments including Chairman, Board of studies in Pharmacy, Mumbai University , member of expert Committee of UPSC, MPSC, AICTE, NBA, UGC, DSIR . He is actively associated with professional bodies including IPA, APTI, IPS, ISTE. Dr. Saraf has served as Chairman of expert committee nominated by National Board of Accreditation for evaluation of several Pharmacy institutions in India. Dr. Saraf is recipient of various awards including Principal of the year 2004 award by the Association of Pharmaceutical Teachers of India (APTI) , Maharashtra Pharmacist Association (MPA) award and Amrit Mody Distinguished Researcher award by the Indian Pharmaceutical Association (IPA).He was nominated as Scholar under UGC -Indo Soviet Exchange Programme held at Academy of Sciences, Moscow, Novosibirsk & Leningrad & Scholar under UGC Indo-Hungarian Programme held at Budapest. He is also recepient of prestigious Development Fellowship award by Association of Commonwealth Universities, London & by the Indian Pharmaceutical Association for his outstanding contribution in the profession. Recently he has been selected by AICTE under the Scheme of Margdarshak by AICTE.

ABSTRACT

Natural products and their structural analogues have historically made a major contribution to pharmacotherapy, especially for chronic diseases. The idea for a disease target can come from a variety of sources including academic and clinical research and from the pharmaceutical sector. In India, there has been substantial investment in the past decade to provide academic institutions with the capabilities for early-stage drug discovery. Nevertheless, academia has many challenges for drug discovery, such as technical lack of expertise, lack of funding, and lack of infrastructure, which reduce the overall goal of drug development. However, academia still plays an important role in the drug discovery ecosystem and provides many success stories of discovery with collaboration with various translational resources. Current research in academia relies on the plants and its isolated compounds. However, these natural products also have many challenges, such as technical barriers for screening, isolation, characterization and optimization. Academia can use the multifaceted approach combining botanical, phytochemical, biological, and molecular techniques to get success in drug discovery. In our lab, we have worked on many medicinal plants and isolated compounds for the treatment of asthma, diabetes, Parkinson's disease, chronic kidney diseases, and sickle cell anemia . The academic drug discovery alone or with the support from various resources can play a significant role in improving patient condition and extending the lifespan of many patients. The pre-clinical work carried out on selected medicinal plants is presented.

Sovateltide, a Promising Drug Product for Cerebral Stroke

Dr. Anil Gulati
Emeritus Professor, Midwestern University ,USA

BIODATA

Anil Gulati, MD, PhD is Professor Emeritus at Midwestern University, the University of Illinois at Chicago, and is a consultant to Advocate Lutheran General Children's Hospital. He is the Chairman and Chief Executive Officer at Pharmazz, Inc., Willowbrook, Illinois. He invented, developed, and obtained marketing authorization of a first-in-class resuscitative agent indicated for patients with massive blood loss, a condition with high unmet medical needs. He is leading the research, invention, and development of a novel drug to treat cerebral stroke now in the late stages of clinical trials. In addition, he has discovered drugs with the potential to treat Alzheimer's disease, hypoxic-ischemic encephalopathy, acute spinal cord injury, cardiac arrest, acute kidney injury, diabetic ketoacidosis, opioid tolerance and dependence. Dr. Gulati has 54 issued patents. He is a recipient of the Outstanding Faculty Award 2017, Paul R Dawson Biotechnology Award 2014, and the distinguished Littlejohn Award 2014. Dr. Gulati is not only a United States Fulbright Scholar 2008-2009, but he is also a winner of the International Ranbaxy Research Award 2007. Dr. Gulati was the Scientific Reviewer of the United States Defense Medical Research and Development Program, Combat Casualty Care Research Program 2016 and 2017. As the Professor and Associate Dean of Research, he promoted the medical research and faculty development of more than 50 faculty members. In addition, Dr. Gulati trained hundreds of medical residents and fellows to be research-oriented physicians and guided researches for more than 100 graduate students. He has ~300 peer-reviewed publications, 6,368 citations, an h-index of 44, an i10-index of 167, Research Gate score of 47.34. Dr. Gulati continues to forge ahead with discovering and developing new therapies for critically ill patients and his contributions to education and research.

ABSTRACT

ET_B receptors located widely throughout the CNS are a necessary component of the developing nervous system. Sovateltide is a highly selective ET_B receptor agonist. It augments neuronal progenitor cell differentiation and improves mitochondrial morphology and biogenesis to activate a regenerative response in the CNS. We are developing sovateltide for the treatment of various CNS disorders. Toxicological studies have been completed in mice, rats, and dogs. These studies indicated that it is highly safe, well-tolerated, and has a good safety margin. Sovateltide was safe and well-tolerated in a Phase I trial (CTRI/2016/11/007509) in healthy human volunteers. The Minimum Intolerable Dose (MID) was established as 0.9 µg/kg, and the Maximum Tolerated Dose (MTD) was 0.6 µg/kg. The therapeutic dose of sovateltide in patients with cerebral ischemia is 0.3 µg/kg, which is lower than the established MTD. In addition, we conducted human studies in patients with cerebral ischemic stroke (NCT04046484, CTRI/2017/11/010654; NCT04047563, CTRI/2019/09/021373). All the patients received saline or sovateltide within 24 hours of stroke onset. In Phase II clinical trial in ischemic stroke patients, sovateltide showed a trend of a greater number of patients with a modified Rankin Scale (mRS) reduction of 2 or more points (15 of 17) compared to placebo (10 of 17) and a greater ratio of patients reaching an mRS of 0 (8 of 18) compared to placebo (6 or 18). A prespecified interim analysis during the Phase III trial (more than 30 patients per arm) showed a similar result.

The Birth of a New Contraceptive, From Concept to US FDA Approval and Market

Dr. Sanjay Garg
Professor, Pharmaceutical Sciences, University of South Australia, Adelaide, Australia

BIODATA

Professor Sanjay Garg is a pharmaceutical scientist with a passion for research and teaching in translational drug development and delivery and a mission to make lives better for our patients. He is the Director of the Centre for Cancer Diagnostics and Therapeutics (CCDT) and Pharmaceutical Innovation and Development Group (PIDG). His interdisciplinary research is based on the principles of engagement, innovation, translation and impact.

Prof Garg is a pharmacist and completed PhD from the National Institute of Immunology, India. He joined the Program for Topical Prevention of Conception and Disease (TOPCAD) Rush University, Chicago (1995-1998) the USA, developing novel microbicides compounds and formulations. A number of his patented formulations have reached clinical stages and market in the USA, India, New Zealand, UK, and Australia, e.g. Acidform, an acid-buffering formulation (USA Patent 6706276) has been approved by US FDA as a non-hormonal contraceptive (Phexxi) and is now available in the USA market. During the tenure with the University of Auckland, New Zealand (2003-2011), he established AnQual Good Laboratory Practice (GLP) compliant analytical laboratory. Acting as Deputy Head of the Auckland Pharmacy School, he played a critical role in establishing research and post-graduate program.

ABSTRACT

Dr. Sanjay Garg will share his research journey of 22 years in developing a new contraceptive which is now approved by US FDA and marketed in the USA as Phexxi.

Neurologic Music Therapy

Dr. Neelima Chauhan
Associate Professor, Department of Biochemistry and Molecular Genetics, Chicago, USA

BIODATA

Dr. Neelima Chauhan is an Associate Professor at Department of Biochemistry and Molecular Genetics, Chicago, USA. She has Trained and Supervised 05 undergraduate Students, 09 Post-doctoral Researchers, 04 MD/MD PhD Students (Research Elective Rotations, Medical scientist Training Program) and 03 PhD-Graduate Students. She is a member of Society for Neuroscience (SFN), American Society for Neurochemistry (ASN), International Society to Advance Alzheimer's Research and Treatment (ISTAART), Society for Neurotrauma. She is part of Institutional Animal Care and Use, Institutional BioSafety, Promotion, R&D, Committees**.** She is also in the review committees of NIH BDCN, MDCN (DDNS) study Sections, RRD6-Aging and Neurodegenerative Diseases Review Panel. She is the Editorial Board Member of various journals viz. Restorative Neurology and Neuroscience, American Journal of Alzheimer's Disease & Dementia, Journal of Alzheimer's Disease, Journal of Neurology and Neurosurgery, The Scientific Pages of Alzheimer's Disease, The Scientific Pages of Translational Neuroscience, Neurology & Neuroscience, Journal of Depression and Anxiety, Editor-in-Chief, The Neuroscience Chronicles (ProBiologists LLC).

ABSTRACT

The mental health effects of music are increasingly recognized. There is an emerging interest in using music as a non-invasive alternative therapy for various mental disorders. Neurologic Music Therapy (NMT) has become distinct rehabilitative science that has shown promising recovery from many neurological diseases and hence has been approved by the World Rehabilitation Federation as an effective evidence-based method of treatment. Neurologic Music Therapy is defined as the therapeutic application of music to ameliorate cognitive, sensory, and motor function due to neurologic disease(s) of the human nervous system. There is emerging evidence that incorporating music into a rehabilitation program fosters recovery of hand function, dexterity, spatial movement, cognitive function, mood, coordination, stride length and memory. Learning words as lyrics, melodic intonation therapy and singing can help the aphasic patient to recover faster. Neurologic Music Therapy is research-based therapeutic option built upon the scientific knowledge in music perception and production and the effects thereof on nonmusical brain and behavioral functions. Beneficial Effects of NMT on neurological disorders are discussed.

Radiopharmaceuticals: Magical Probe for Diagnosis

Dr. Tapas Das

Head, Radio Pharmaceutical Programme in BARC, DAE, India

BIODATA

Human body being opaque, looking inside it for the detection of any disorder or diagnosis of any disease is generally painful. In the past, exploratory surgery was one common way to look inside the body, but today's physicians can use a huge array of non-invasive techniques which include X-rays, ultrasound, MRI and so on. Each of these techniques has advantages and disadvantages that make them useful for different conditions. However, while other diagnostic imaging methodologies are now capable of providing astonishingly detailed morphological information, nuclear medicine imaging employing 'Radiopharmaceuticals' enjoy the unique advantage of providing specific information regarding the function of organs and their patho-physiological disturbances. 'Radiopharmaceuticals' are a special class of radiochemical formulations having high purity and safety for human administration and used for either diagnosis or therapy. Radiopharmaceuticals take the advantage of both the nuclear properties of the radionuclides and the pharmacological properties of the pharmaceuticals. Diagnostic radiopharmaceuticals may be defined as radiolabeled molecules designed to produce images of the specific disease sites. Present day nuclear medicine physicians are equipped with more than one hundred nuclear medicine imaging procedures and these uniquely provide information about the function of virtually every major organ system of the human body. The talk will cover the rationale of using radiopharmaceuticals for *in-vivo* imaging, the structure and formulation methodology of diagnostic radiopharmaceuticals, concept of different imaging modalities used for scanning of human body, various radiopharmaceuticals used for diagnosis of different human ailments and the process of taking radiopharmaceuticals from laboratory to clinics.

ABSTRACT

DR. Tapas Das is presently working as Head, Radiopharmaceutical Chemistry Section in Radiopharmaceuticals Division of Bhabha Atomic Research Centre (Department of Atomic Energy (DAE), Government of India), Mumbai. He had joined DAE in 1998 after completing his post-graduation in Chemistry and one year Orientation Course in Nuclear Science and Engineering from BARC Training School. He had obtained Ph.D. from University of Mumbai in 2004 for his studies on 'Radiopharmaceutical Sciences'. His research field of interest includes production of radioisotopes and development of radiopharmaceuticals for diagnostic and therapeutic applications. Dr. Das has received several awards such as, Prof. H.J. Arnikar Best Thesis Award, Tarun Datta Memorial Young Scientist Award, DAE Young Scientist Award, DAE Scientific & Technical Excellence Award, DAE Group Achievement Award. Dr. Das has served as Technical Co-operation Expert and Consultant of International Atomic Energy Agency (IAEA), Vienna to various countries. He is an 'Associate Professor' and recognized Ph.D. guide of Homi Bhabha National Institute (HBNI), Mumbai. He has written one book, several book chapters/technical reports and published more than 100 articles in various peer reviewed international journals. He is an Editorial Board Member of 'BioMed Research International' Journal and regular ad-hoc reviewer of many international journals published by ACS, RSC, Elsevier, Wiley, Springer, Bentham, Hindawi etc.

Effects of Gabapentinoid Treatment on Postoperative Pain Perception and Opioid Consumption in Patients That Underwent a Spinal Surgery

Dr. Raj Sevak
Assistant Professor, University of the Pacific, CA, USA

BIODATA

Raj completed B. Pharm. and M. Pharm. from L. M. College of Pharmacy in India and obtained Ph.D. in psychopharmacology from the University of Texas Health Science Center. He later obtained PGY1 pharmacy-practice residency training from the Auburn University, and community pharmacy fellowship training from the East Tennessee State University. He has been a faculty member at the University of California, Los Angeles (UCLA), where he obtained over $11 million research funding from the National Institute of Health and private sources as a Principal Investigator or Co-Investigator to conduct clinical research on substance abuse. He has presented research findings to over 50 scientific conferences and published 20 journal articles. Raj has been serving as an editor and reviewer of several clinical and scientific journals. In recognition of his significant contributions to neuropsychiatry, he has received awards from several national organizations, such as College on Psychiatric and Neurologic Pharmacists, American College of Neuropsychopharmacology, and College on Problems of Drug Dependence. Currently, he is serving as an Assistant Professor of Pharmacy Practice at the University of the Pacific School of Pharmacy, where he teaches and conducts research on neuropsychiatric therapeutics.

ABSTRACT

Postoperative pain management solely with opioids elevates the risk of opioid-related adverse events during hospitalization and upon discharge. Clinical trials have demonstrated gabapentinoids (e.g., gabapentin, pregabalin) as viable adjunctive treatments to opioids for postoperative pain management after neurosurgeries. However, only a few practice-based studies have examined efficacy of gabapentinoids as an opioid-sparing agent for patients that underwent a spinal surgery. To determine effects of gabapentin or pregabalin on postoperative pain perception and opioid consumption in patients that underwent a spinal surgery. The data were collected by retrospective chart reviews of patients that underwent a spinal surgery at Yavapai Regional Medical Center, Arizona, USA. Patients were stratified into the following distinct groups: those who were on a gabapentinoid (gabapentin group [n=50], pregabalin group [n=26]), and those who were not taking a gabapentinoid (gabapentin control group [n=49], pregabalin control group [n=28]). The primary endpoints were opioid consumption morphine milligram equivalents (MME) and pain for 24 to 36 hours post-surgery. Mixed-model ANOVA showed significant main effects of gabapentinoids between groups for MME and pain scores. The total post-operative opioid use in MME was significantly.

New Drug Discovery in the Context of Sustainable Development

Dr. A. K. Chakraborti
School of Chemical Sciences,
Indian Association for the Cultivation of Science (IACS), Jadavpur,
Kolkata, India

BIODATA

Professor Asit K. Chakraborti has been a founder faculty member of NIPER, S A S Nagar and had been intimately associated with the development of the institute. He is currently Emeritus Fellow and DAE Raja Ramanna Fellow in the School of Chemical Sciences, IACS, Kolkata. He superannuated as Professor & Head of the Department of Medicinal Chemistry, NIPER SAS Nagar, in August 2019 and thereafter served also as Visiting Professor in the Department of Chemistry, IIT Ropar, Punjab. Prof. Chakraborti obtained M. Sc. degree in Organic Chemistry from Burdwan University, West Bengal, India, in 1977, being placed first in the first class and Ph. D. degree in Synthetic Organic Chemistry from IACS, Kolkata, India in 1985. He received post-doctoral research training in USA in the Department of Chemistry, Clemson University, South Carolina, during 1985-1987 and in the Medicinal Chemistry at Purdue University, West Lafayette, Indiana, during 1987-1989. Thereafter he returned to the country and joined the Department of Chemistry, Burdwan University as a faculty during 1990-1994. He moved to the Department of Medicinal Chemistry, NIPER SAS Nagar, as Assistant Professor in November 1994 and was promoted to Associate Professor in 1999 and Professor & Head in 2001. He has guided 40 Ph. D. and 130 Masters students, published 181 research papers with > 11,000 citations with an h index of 63, and filed 42 patents.

ABSTRACT

Chemistry, organic synthesis in particular, occupies the centre stage of new drug discovery. However, the adverse effects of the processes in preparing the drug candidate molecules suggest to incorporate modern developments in chemical methods in discovery chemistry research to cope up with the necessity of sustainable development and enrich medicinal chemists' synthetic tool box. However, inadequate applications of the newly developed synthetic methodologies in discovery medicinal chemistry have led to suggest ways to implement sustainable medicinal chemistry in new drug discovery. Aim of this talk is to demonstrate a few case studies of sustainable development of medicinal chemistry incorporating a few green synthetic methodologies to generate and optimize new therapeutic leads.

A One-health Approach to Antimicrobial Resistance

Dr. Shreedhar Narayan
Director, Chief Executive Officer and Chairman of Board, Foundation for Neglected Disease Research (FNDR), Bangalore, India

BIODATA

Shridhar has more than 20 years of drug discovery and development experience in Indian pharmaceutical industry in various therapeutic areas. Shridhar holds a basic degree in Pharmaceutical Sciences from University of Mumbai, a PhD in Pharmacology from Ohio State University, and has post-doctoral experience in Neuropharmacology at the University of California, Los Angeles. Shridhar, a serial entrepreneur, is currently Founder Director and Chief Executive Officer of Foundation for Neglected Disease Research (FNDR), a not for profit company with a mission to discover and develop drugs for diseases of the developing world. In this role, Shridhar has been responsible for the design and implementation of the scientific and business strategy for drug discovery and development, managing a team of scientists in chemistry, biology, DMPK, safety pharmacology, and regulatory toxicology and clinical development. Prior to this, Shridhar was appointed Vice President and Head of Innovative Science for the Infection Innovative Medicines group at AstraZeneca, India and was responsible for the discovery and development of potential clinical candidates in TB and malaria. Throughout his career, Shridhar has overseen the Discovery and Development of 1 drug and 18 clinical candidates in the areas of infection, oncology, diabetes, inflammation and respiratory diseases. He has also executed out-licensing deals with major pharma as well as in-licensing of candidates (NCE/NBE) which are in active development. This has generated revenues in excess of 180 million USD. As part of FNDR, Shridhar has managed to raise donations worth 2.7 million USD from AstraZeneca, more than 2 million USD in grant money from the funding agencies and around 5 million USD in investment into preclinical and clinical asset development by partners over the last 4 years.

Beyond 100: The Therapeutic Use of Concentrated Insulin for The Treatment of Severe Insulin Resistance

Rory E. Kim
Assistant Professor of Clinical Pharmacy, Director, PharmD Scholarly Project USC School of Pharmacy, USA

BIODATA

Rory E. Kim, PharmD, MACM, BCACP is an Assistant Professor of Clinical Pharmacy in the Department of Clinical Pharmacy at the University of Southern California School of Pharmacy. Dr. Kim completed a PGY1 Pharmacy Residency and a Fellowship in Ambulatory Care and Academia. She is a Board Certified Ambulatory Care Clinical Pharmacist and received a Master of Academic Medicine from the Keck School of Medicine. She is the Director of the PharmD Scholarly Project and the Co-Director of the USC School of Pharmacy International Summer Program. The International Summer Program invites students from all over the world to study together in an integrated intensive focused on foundational sciences and clinical application. She serves on an interprofessional care team in the Specialty Endocrine Clinic at Los Angeles County Medicine Center. She coordinates the PharmD Scholarly Project course series and the Pharmacy Literature Analysis and Drug Information courses. She has presented and taught regionally, nationally, and internationally on topics related to health professions education, educational technology, inter-professional practice, diabetes, and smoking cessation.

ABSTRACT

It has been one hundred years since insulin first saved the life of a person with diabetes. The discovery of insulin in 1921 transformed diabetes from a death sentence to a chronic condition. Over the last century, innovations in insulin formulation have allowed for improved pharmacokinetics, enhanced ease of use, and decreased risk of hypoglycemia. However, patients with diabetes who have severe insulin resistance (requiring >2 units/kg/day or >200 units/day of insulin) may struggle to meet therapeutic goals despite high insulin doses. Newer antidiabetic agents and concentrated insulins, largely developed in the last ten years, provide more options for optimizing diabetes therapy. This session will guide participants to identify causes of severe insulin resistance and select optimal pharmacologic therapy. Participants will explore the potential benefits, risks, and challenges of using concentrated insulin formulations for severe insulin resistance.

Designer Nanoparticles for Targeted Delivery - A Serendipity

Dr. Padma Devrajan
Professor
Institute of Chemical Technology, Mumbai, India

BIODATA

Dr (Ms) Padma V. Devarajan is Dean Research and Innovation, Professor in Pharmacy and former Head and Coordinator M.Tech Pharmaceutical Biotechnology, Department of Pharmaceutical Sciences and Technology at the Institute of Chemical Technology, Mumbai, India. She is also a member of the Board of Governors, President of the Innovation Council and In-charge of the World bank Technical Education Quality Improvement Programme(TEQIP) at the Institute of Chemical Technology, the only ELITE University and Centre of Excellence in the state of Maharashtra in India. Her research interests include colloidal carriers for targeted delivery in cancer and infectious diseases, Veterinary Drug delivery, Bioenhancement strategies, and Mucosal DDS as alternative to parenteral administration and QbD in drug development. She has over 100 publications and presentations in cited journals and national/international conferences, and over 15 book chapters in the area of drug delivery. Her books on "Targetted Drug Delivery-Concepts and Strategies" & Targetted Intracellular Delivery by Receptor Mediated Endocytosis published by Springer won her the Prof. N. R.Kamath Book Award at ICT. She has filed many patents international/ national, has eight patents granted, six patents/technologies licensed and two technologies commercialized. Her research is funded through a number of Grants from the Government and the industry including companies from Japan, Germany and USA. She is also a consultant to the Pharma Industry.

ABSTRACT

Targetted drug delivery systems have important implications for treatment of cancer and infectious diseases. Among targeted systems, splenotropic drug delivery systems which exhibit enhanced splenic uptake, have immense clinical significance for intracellular infections including leishmaniasis, trypanosome, splenic TB, AIDS, malaria, and hematological disorders such as hairycell leukemia, idiopathic thrombocytopenic purpura, and autoimmune hemolytic anemia. The spleen receives barely 15% of an injected dose following intravenous injection of nanocarriers due to rapid clearance from the blood stream by the MPS. Splenotropy therefore demands engineering of particulate carriers that upon intravenous injection avoid clearance by hepatic kupffer cells while permitting access and retention in the spleen. Splenotropic behaviour was surprisingly displayed by lipid-polymer nanoparticles. LIPOMER) of doxycycline hydrochloride. This serendipitous finding, the science and translational aspects of this new nano DDS would be discussed.

Nanotechnology in Health Care Its Impact and concern: The Next Big Thing Is Really Too Small

Dr. Prakash Diwan

Director Grade Scientist, IICT, Hyderabad, India

BIODATA

Dr. Prakash Diwan has undertaken multiple assignments as Member, BoG, National Dope Testing Laboratory, Govt. of India; Expert Member, FSSAI, Govt. of India Former President, Indian Pharmacological society; Founder Director NIPER, Hyderabad.; Director Grade Scientist, IICT, Hyderabad.; Technical Advisor, Indian Pharmacopoeia Commission, Govt. of India; Former Technical Consultant, IICT, Hyderabad. He was post graduated from Institute of Medical Education and Research, Chandigarh, India 1981. He has published 197 Research Papers and 17 Patents. He has guided 22 Ph.D scholars and advised 22 scholars for doctoral research, 14 students for M. Pharm dissertation work in Pharmaceutical Sciences. He has Research collaborations with NIN Hyderabad, DRDO Gwalior ,Jamia Hamdard University,, Andhra University, Kakatiya University, DR H S Gour Vishwavidyalaya, Osmania university, J N Technical University, Hyderabad. His area of interest is Novel Drug Delivery Systems, Oral Delivery of Insulin, Dendrimers as drug carriers and Pharmaceutical Industry Projects.

ABSTRACT

Nanotechnology is an exciting and rapidly emerging innovative technology in healthcare. Nature has been performing 'Nano technological feats' for millions of years. Nanotechnology was first articulated by Richard Feynman in 1959, in his famous Caltech talk "There is Plenty of Bottom at the Bottom". From Science Fiction to Reality: Nano medicine brings fresh hope to the medical world. Medical applications, dominate today's market. Emerging Nanomedicine technologies could dramatically transform medical science today with their potential to address unmet medical needs and provide targeted therapy. Nano medicine can offer perfect solutions for various life-threatening diseases including effective drug delivery systems, drug discovery and development, medical diagnosis and devices, implants etc. The nanotechnology 'the next industrial revolution' will have impact on society, and environment and will open a huge range of opportunities of benefits for both the scientists and the patients. Nanomedicine application areas: Therapy technique, Molecular diagnosis, Nano pharmaceuticals, Surgery, Nanorobots, Cancer treatment, Neurological disorders, Cardiovascular disorders, Diseases of bones and joints, Diseases of eye, Infectious diseases,. Medical Advantages: Nanotechnology has the potential to bring major advances in medicine. The long road ahead to achieve our goals: Currently, nanotechnology in healthcare still has a lot of hurdles to overcome. More research is needed on the long-term impact of nanotechnology, and its environmental implications. Clearer guidelines need to be set by authorities regarding nanotech-based devices and potential health risks. Nanotech-based devices are often highly priced which hinders their mass manufacturing. Affordable production alternatives for these devices will aid in making this technology mainstream. The great scare of modern Nano technology may lead to terrorism. What lessons should we learn??

Certainly, more questions than adequate answers. Hope of better is only misuse of technology that impacts mankind in a negative way. Stringent regulations are must to avoid disasters. We can certainly say that if used carefully and meticulously, will guarantee a great benefit of Nano technology.

Improving Research Practices in Preclinical Pharmacology with an Emphasis on Quality Aspects

Dr. Dhiraj Kabra
Deputy General Manager, Sun Pharma Advanced Research Company, Vadodara, India

BIODATA

Dhiraj Kabra is associated with in vivo pharmacology team at SPARC since Dec 2019 as a Deputy General Manager and looking after neurodegeneration and oncology projects. Before joining SPARC, he was leading the epigenetic biology team at German Diabetes Center, Dusseldorf, Germany. He has more than 13 years of drug discovery experience in the field of diabetes, obesity, neuro-endocrinology, neuropharmacology, cerebral ischemia, and epigenetic biology. He has completed his Master's and a Ph.D. degree in Pharmacology and Toxicology from the National Institute of Pharmaceutical Education and Research, NIPER, Mohali, India. After completion of his Ph.D., in 2009, he moved to the University of Cincinnati, Ohio, USA for his postdoctoral work and subsequently moved to Helmholtz research center, Munich Germany, and identified a new mechanism that regulates the effect of the satiety hormone leptin under the supervision of Prof. Dr. Matthias Tschöp. He is authored in more than 25 publications and significantly contributed to high-impact research work published in Nature Communication, Cell Metabolism, Nature Medicine, Journal of Clinical Investigation, Nature Metabolism, Diabetes, Molecular Metabolism, etc.

Reproducibility of research finding in biomedical research is a critical path in any successful drug discovery. Recently, several questions have been raised by the scientific community across the globe that there is a lack of reproducibility in the research outcomes. Notably, this has seriously impacted the drug discovery process and delayed the translational outcome. Moreover, such kind of activity not only wasted valuable resources but also threaten the reputation of biomedical science and lost public trust. At the early age of the scientific carrier, institutions and universities provide the foundation to each individual to become a great scientist either in academia or in industry. It is an unmet need and a duty of each research scientist to build a strong ecosystem to improve and optimize the reproducibility of biomedical research to serve society and provide quality health. Periodic training of quality assurance and good laboratory practices need to be imparted to improve reproducibility. To address the issue on at this time, it is need of hour to adopt the GLP guidance used in safety studies and clinical science to the nonclinical efficacy pharmacology.

Use of Real World Evidence in Biopharmaceutical Regulatory Decision Making

Dr. Stephen F. Amato
Director, Global Regulatory Affairs & Quality Assurance Programs
Teaching Professor, Northeastern University

BIODATA

Dr Stephen F. Amato has over 25 years of experience in the pharmaceutical, biotechnology, and medical device industries. Prior to his position as Department Chair of Regulatory Affairs/Quality Assurance/Advanced Manufacturing at Northeastern University, Steve was the Founder and Managing Director of tJun17 Life Sciences, LLC, and also a Managing Director for Cardinal Health Regulatory Sciences (CHRS). Additionally, as an executive with GfK Health, Dr Amato managed and worked on client global regulatory affairs and reimbursement projects in the areas of market access, pricing, and payer coverage, coding, and payment strategy. As an executive director at Anika Therapeutics, Steve managed all aspects of the company's product portfolio including regulatory, reimbursement, market segmentation, targeting, positioning, pricing, and promotional strategies. From 2000 to 2007, he was the Group Director of Knee Repair at Smith & Nephew Endoscopy where he managed a $200 M orthopaedic product portfolio. Earlier in his career, Steve worked for Visible Genetics where he was responsible for developing and launching genomic molecular diagnostics products used for subtyping human papilloma virus (HPV) and other infectious disease agents. He has also worked with Critical Therapeutics on the development and commercialization of treatments for gram-negative sepsis.

ABSTRACT

This presentation will provide an overview of the use of real-world evidence (RWE) in regulatory decision making. In the United States the concept of utilizing data collected post-marketing approval through actual clinical practice to establish long-term safety and efficacy for new biotherapeutic products was introduced through the passage of the 21st Century Cures Act in late 2016. Since that time various types of challenges have been identified and addressed in executing on this concept. Several of the aforementioned challenges in implementing an effective RWE based regulatory strategy will be discussed including the use of observational studies/pragmatic clinical trials, comparative effectiveness research, registries, patient reported outcomes, primary vs. secondary data collection, medical claims and electronic health record data, social media, wearable devices, and artificial intelligence. In addition the implications of utilization of RWE on regulatory decision making policy will be addressed.

Accelerating the Development of Cognition Therapeutics for Age-Related Neurodegenerative Disorders Through Predictive Biomarkers

Dr. Vinay Parikh

Associate Professor, Department of Psychology and Neuroscience, Temple University, Philadelphia, PA 19122

BIODATA

Vinay Parikh is a Psychology and Neuroscience Professor, and Head of the Neurochemistry and Cognition Research Group at Temple University. Previously, he served as the Director of Neuroscience Program and provided strategic leadership, direction, and guidance for all educational and professional activities in the program. Dr. Parikh is an expert neuroscientist with over 20 years of experience in research on neuromodulatory systems and behavior in health and disease. Through this research, he has made significant contributions to understanding of neural substrates critical for attention and executive functions, and how dysregulation of these processes contribute to the development of mental health and substance use disorders. He has also done research investigating mechanisms of brain remodeling in cognitive aging, which has opened new avenues to develop biomarkers and therapies for age-related dementia and Alzheimer's disease. Prior to joining Temple, Dr. Parikh worked as a Research Faculty at the University of Michigan where he pioneered biosensor-based approaches to assess the efficacy of cognition enhancers. He also led and participated in several university-industry collaborative projects on the design and development of psychotherapeutic interventions for schizophrenia and ADHD. Dr. Parikh has authored more than 80 publications and he has delivered over 150 scientific presentations and invited talks. Dr. Parikh serves as an Associate Editor for Frontiers in Integrative Neuroscience, and on the editorial board for European Journal of Neuroscience. He has also served on scientific advisory and review committees of numerous biomedical research agencies including the NIH, Alzheimer's Association, and Michael J Fox Foundation.

ABSTRACT

Despite the subsequently increased prevalence of geriatric cognitive disorders and dementia, including Alzheimer's disease (AD), currently available pharmacotherapies provide only symptomatic relief, and do not halt or reverse the progression of these age-related conditions. With enormously high attrition rate of clinical drug development for AD, new strategies are needed to accelerate the discovery process. Here we present data from recent studies involving genetic, neurophysiological, and behavioral approaches that identify sensitive biomarkers predicting cognitive risk and resilience in aging. We emphasize that incorporating a biomarker-driven strategy early during the preclinical discovery phase would not only facilitate the selection of promising novel drug candidates but also optimize clinical trial design for cognitive improvement with better success for treatment outcome.

Pathological Features of Rotator Cuff Tendon Injury: Potential Treatment Strategies to Enhance Healing Response

Dr. Devendra Agrawal
Senior Vice President for Research & Biotechnology, Professor & Chair, Department of Translational Research
Western University of Health Sciences, CA, USA

BIODATA

Dr. Devendra K. Agrawal earned M.Sc. (Chemistry) in 1973 and Ph.D. (Biochemistry) in 1978 from Lucknow University, India. Following his tenure as a Clinical Biochemist at King George's Medical College, Lucknow, India, Dr. Agrawal moved to Canada and earned Ph.D. (Medical Sciences) in 1984 from McMaster University, Canada followed by a Postdoctoral Fellowship at the University of British Columbia, Vancouver, Canada. In 1985, he was recruited as an Assistant Professor at Creighton University School of Medicine, Omaha, Nebraska, USA where he rose to the rank of Full Professor in 1997. Dr. Agrawal also earned MBA in 2004 and MS (Information Technology & Management) in 2005 from Creighton University, Omaha, Nebraska. In 2009, Dr. Agrawal founded the Center for Clinical & Translational Research at Creighton University, which later developed into an independent Department. Dr. Agrawal was the Founding Chairman of this Department. In addition, Dr. Agrawal served as the Senior Associate Dean of Clinical & Translational Sciences at Creighton. In July 2019, Dr. Agrawal moved to California where he took the position of Senior Vice President for Research and Professor & Chair, Department of Translational Research at Western University of Health Sciences, Pomona, CA, USA.

ABSTRACT

Shoulder injury is the 3rd most common musculoskeletal problem. Rotator cuff (RC) pathology following RC injury (RCI) is a significant cause of pain, disability, and socioeconomic cost. One of the most significant factors predictive of structural failure following surgical repair is fatty infiltration of the RC tissue which is associated with severe inflammation, RC tendon stiffness and re-tear. The pathophysiology of this process is not fully understood and predominantly irreversible in severe cases. While repairing a chronically torn RC that has undergone significant fatty infiltration is technically and structurally feasible at zero-time point, the pathologic musculotendinous unit often fails to heal and/or function due to its inherent biological disadvantaged state due to fatty infiltration and inflammation. There is higher prevalence rate of RCI in diabetics (~28%) compared to 5% in general population. We found triggering receptor expressed on myeloid cells-1 (TREM-1)-expressing tenocytes in the RC of patients with significant fatty infiltration. TREM-1 and TLR4 expression was significantly higher in the RC tissue of diabetics compared to non-diabetic patients. Similar findings on TREM-1 and TLR4 expression were found in RCI rats. These findings in human subjects and rat model support the role of TREM-1 in the pathogenesis of poor healing response, and thus a potential therapeutic target to enhance RC healing. Additionally, exosomes from mesenchymal stem cells could also be used to accelerate the healing response following tendon repair.

21 Revolutions of The 21st Century In Pharmaceutical Sciences

Prof. Ramesh K. Goyal
Vice Chancellor, Delhi Pharmaceutical Sciences & Research University. New Delhi, INDIA

BIODATA

Professor Ramesh K. Goyal, is the Vice Chancellor, Delhi Pharmaceutical Sciences and Research University (DPSRU) since 2016. Formerly he has been the Vice-Chancellor of the Maharaja Sayajirao University of Baroda, Executive Director (Research & strategies) at V ClinBio Labs., Chennai, Director (Pharmacology) at NMIMS University, Mumbai; Director ISF College of Pharmacy, Moga, Punjab and Professor at L. M. College of Pharmacy, Ahmadabad. In 2019 he was conferred with the Honorary Professorship at Stavropol State Medical University, Russia and he is second only non-Russian Professor being bestowed upon this title in 80 years of the University. Recently he has also been appointed as the Distinguished Professor at the UCSI University, Kuala Lumpur, Malaysia. He has over 44 years of experience in Teaching and Research particularly in Cardiovascular Pharmacology & Diabetes. He was the post-doctoral scholar, visiting scientist and Visiting Professor in University of British Columbia Vancouver and University of Manitoba, Winnipeg, Canada. Dr. Goyal got three patents awarded, 6 under consideration, about 40 books and book chapters, over 370 full papers articles ('h' index 45), over 600 abstracts published in National and International journals. He has guided 44 Ph.D. and 190 MPharm/MBA/MPH students. He has been invited as the Speaker, and Chairman in several International Conferences. Dr. Goyal has delivered over 291 invited lectures in India and 42 lectures abroad including many prestigious orations. He has been the Member of Board of Governor, Board of studies and Academic Councils of several universities in India.

ABSTRACT

The 21st century will be remembered for Covid-19 pandemic although over 80 years are yet to come. Just two years of the COVID-19 have brought a number of transitions. Individuals, businesses, and society is now looking forward shaping their futures rather than just grinding through the present. Digitally enabled productivity is now gaining to accelerate the Fourth Industrial Revolution. For pharmaceutical companies there are number of opportunities emerging. More than 20 % of the global workforce is now working away from the office, and still be just as effective. There is now a wave of innovation and launching of generation of entrepreneurs. The 'biopharma' revolution is one of the major transformation that is in the forefront for the medical and pharmaceutical world in the form of biomolecules, biosystems, biomachines, and biocomputing. One can enlist 21 revolutions w.r.t. pharma world in the 21 years of current century. This includes a. Human Genome Project; b. Gene Therapy; c. Precision Medicine; d. Biomarker based Drug Discovery; e. Reverse Pharmacology; f. Reverse Translation; g. Stem cell Therapy; h. Regenerative Therapy; i. Crisper Technology; j. Nanotechnology; k. QbD; l. Medical Devices; m. Telemedicine; n. Drug Repurposing; o. Molecular Diagnostics; p. Emergency Use Authorization; q; Proteomics; r. Phyto-pharmaceuticals Regulatory; s. Metabolomics; t. ISO : 13053 : 2011 : the concept of 6511 being defined and u. Tele-Education. These revolutions will sustain for a long time and may bring many more innovative and revolutionary medicines and medical devices to the world,

Elucidation of Involvement of Oxidative Stress and Redox Sensitive Transient Receptor Potential (TRP) Channels in Diabetic Neuropathy Using Pharmacological Approach

Dr. S. S. Sharma
Professor, Department of Pharmacology, National Institute of Pharmaceutical Education and Research (NIPER), Mohali, India

BIODATA

Dr Shyam S Sharma is a Professor in the Department of Pharmacology and Toxicology at the National Institute of Pharmaceutical Education and Research (NIPER), Mohali, Punjab, India since 2009. Before joining NIPER Mohali, he worked as postdoctoral fellow at the University of Illinois at Chicago, USA and did his PhD (Pharmacology) at the All India Institute of Medical Sciences (AIIMS), New Delhi and M. Pharm. from DIPSAR New Delhi. Dr Sharma is a Fellow of Indian Pharmacological Society (FIPS). His research interests includes understanding the potential role of pharmacological agents in stroke, cardiovascular diseases and diabetic complications. Dr Sharma has published more than 150 peer reviewed research papers/patents/book chapters with more than 5000 citations with h-index 40. He has more than 20 years of teaching (master's and doctorate students) and research experience. Dr Sharma has guided more than 100 master's and doctorate students. He has delivered more than 100 invited talks at national & international levels. He has completed more than 20 extramural and industry funded projects.

ABSTRACT

The most common and severe complication of diabetes is diabetic neuropathy (DN), affecting about 50 % of all diabetes patients. Diabetic neuropathy has been known for its complex aetiology with several interwoven mechanisms further worsening the scenario. This complexity has challenged the drug discovery scientists for decades and in spite of all the research accomplished in the field, there are no approved therapies which promise either to cure or mitigate various deficits associated with diabetic neuropathy. Only few symptomatic treatments are available which lessen the neuropathic pain which is one of cardinal features of diabetic neuropathy. The pathogenesis of diabetic neuropathy is comprised of complex interrelated metabolic, neurochemical and vascular processes. Our studies have demonstrated the involvement of oxidative stress in diabetic neuropathy using pharmacological interventions. Recently it has been reported that redox state of cells can modulate TRP channels. Members of Redox TRP channels include TRPA1, TRPC3, TRPC5, TRPC6, TRPM2, TRPM7, TRPV1, TRPV3 and TRPV4. Involvement of redox-sensing TRP channels have been postulated in neuropathic pain, however involvement of redox TRP channels has not been elucidated in diabetic neuropathy. We are investigating involvement of TRP channels in diabetic neuropathy. This talk will provide insight into the potential role of oxidative stress and redox TRP channels in diabetic neuropathy using pharmacological approach. (Acknowledgement: Financial assistance from SERB Grant # CRG/2020/003019 to SSS).

Drug Development For Autism Spectrum Disorder: How To Validate Experimental Models And Futuristic Approach

Dr. Bikas Medhi
Professor, Department of Pharmacology, Post Graduate Institute of Medical Education and Research (PGIMER), Chandigarh, India

BIODATA

Dr. Bikash Medhi is Professor & Ex-Additional Medical Superintendent (AMS) in PGIMER, Department of Pharmacology. His area of expertise is Experimental Pharmacology, Clinical Research, Regulatory Pharmacology, Development of nano-formulations, Pharmacogenetics, Pharmacogenomics and Stem cells etc. He has more than 25 years of teaching and research experience and has owned more than 65 prestigious National and International Awards namely, Dr. D N Prasad memorial award with Gold medal 2009 from Indian Council of Medical Research (ICMR), New Delhi, V K Bhargava Award with a Gold medal from National Academy of Medical Sciences 2013, Col. R N Chopra Oration 2014 by Indian Pharmacology Society(IPS), NN Dutta Award 2016 by Indian Pharmacology Society(IPS), Dr. B N. Ghosh Oration at 43rd Annual Conference of IPS and International Conference on "Pharmacology & Translational Research" He is in core panel of expert for Task Force in IND application & Regulatory Affair, lead GLP Inspector, lead GCP inspector, Principle Assessor for NABH, He is in several committee in DCGI office, ICMR, DBT, DST, CSIR,NBE,MCI etc. He has authored five books and 160 chapters and published more than 500 articles in National & International journals. Further, he was selected as a member of various central government committees (GOI) and central government funding agencies: in the IND committee, FDC Committee, Compensation Committee, Sub-committee of Drug Regulation, amendment Committee, Central Working Group Committee for Pharmacovigilance(PvPI), Signal Preview Committee–, Member of Biologic Task Force DGCI-DBT committee, Member of GCP inspection team DCGI, Core Training Panel Committee Pharmacovigilance (PvPI), National Formulary Committee(NFI)–IPC, Chairman selection Committee for TA(IPC), Special Invitee for national Advisory board of Hemovigilance programme, Special Invitee for Central Ethics Committee ICMR, member of the committee for evaluation of Spurious Drugs, antimicrobial evaluation committee(ICMR). Basic Medical Sciences Project evaluation Committee (ICMR), -HCG Vaccine Committee(ICMR), Member of Apex Technical committee for ICMR institute, Core member for Committee ICMR-NIREH Bhopal, member of ICMR funding to CDRI, Special Invitee - TB Task Force, DBT Task Force member, the Expert member for anti-doping (NADA) and member of Expert group NADA, National Board Examination (NBE), Senate and selection committee member for NIPER, Member of Board of studies of Punjab University, Chandigarh, Working as GLP inspector for GLP monitoring authority (DST, New Delhi), member of Technical committee Department of Health Research(DHR), Ministry of health etc. Chairman for Vaccine group ICMR, member of Central ethics committee ICMR, Part of COVID-19 Task Force (Ministry of Health,GOI), Antiviral Screening committee ICMR etc.

Pharmacology Of Drug Resistant Epilepsy

Dr. Ajay Srivastava

Chief Scientific Officer, Vets plus Inc., USA

BIODATA

He is Expert in nutraceuticals and pharmaceutical product development. Trained and experienced in nutritional and neuropharmacology. He worked as SRF as all India Institute of Medical Science (1994–2001), Assistant professor at College of Medical Sciences, Kathmandu University (2001–2002), As Sr. Scientist – Anticonvulsant drug development program University of Utah (2005–2014), Founder of Nutraceutra LLC (2014-2019), College of Medical Sciences. Assistant professor at Kathmandu University (May 2001 - 2002) and presently at Vets Plus, Inc. as Chief Scientific Officer from 2017. He has more than 16 publications. He has been awarded with Bursary Visiting Scientist Award (2007), Junior investigator award (2007), Young Investigator Award for Basic Science (2004), AV Tilak Parvathy Devi award (2001), Servier Young Investigator award (1999). He owns 3 patents too.

Targeting Acute Myelogenous Leukemia And COVID-19 Using Potent Human Dihydroorotate Dehydrogenase Inhibitors Based On The 2-Hydroxypyrazolo[1,5-A] Pyridine Scaffold: From Academy To Clinic

Dr. Marco Lolli

Professor, Department of Medicinal Chemistry, University of Torino (UniTo), Italy

BIODATA

Dr. Marco L. Lolli is an internationally recognized expert in Medicinal Chemistry specialized in hit-to-led optimization process and the design of bioactive using innovative bioisosteric tools. In this latter sense, he focused his attention on acidic hydroxyazoles that, because of their acidity can be considered isosteres of the carboxylic group. By investigating their application as bioisosteres and expanding their synthetic accessibility, over the years he created a versatile tool effective in exploring the chemical space. This technology allowed the discovery of MEDS433, a potent Dihydroorotate Dehydrogenase (hDHODH) inhibitor in advance preclinical stage for Acute Myeloid Leukemia and antiSARS-CoV-2. His major research interests in Drug Design are: broad-spectrum antivirals (SARSCoV- 2 and other CoVs), cancer (Leukemia, Breast and Prostatic cancer), neglected diseases (Malaria, Leishmaniasis,) and Neurotransmission (Gaba and Glu). He has been trained in prestigious national (Istituto Ricerche Farmacologiche "Mario Negri", Bracco Industria Chimica

s.p.a, Research and Development Division) and foreigners (College of Pharmacy, The Ohio State University, Columbus, OH, (USA), School of Pharmacy - University of Wisconsin at Madison, Madison (WI, USA)) laboratories. Since 2022, he is Associate Professor in Medicinal Chemistry (03/D1) at the Dept of Science and Drug Technology of the University of Turin. In February 2022, he also obtained National Scientific Qualification (ASN) as Full Professor in Medicinal Chemistry.

ABSTRACT

The connection between Acute Myelogenous Leukemia (AML) and dihydroorotate dehydrogenase (*h*DHODH), a key enzyme in pyrimidine biosynthesis, has attracted significant interest from Pharma as possible new therapeutic target for AML [1a]. Since the COVID-19 outbreak, the use of *h*DHODH inhibitors as Host Targeting Antivirals (HTA) became one of the most promising therapeutic option for COVID-19 treatment [1b]. By using an innovative bioisosteric approach supported by structure-based techniques, we discovered **MEDS433** [2], a potent *h*DHODH inhibitor (IC_{50} = 1.2 nM), able to induce myeloid differentiation in AML cell lines (THP1 and U937) in the low nM range (EC_{50} = 40 and 26 nM), superior to the *lead brequinar* (EC_{50} = 249 nM (THP1) and 189 nM (U937)), currently in phase I/II clinical trial for AML. By leading the cell into *pyrimidine starvation*, **MEDS433** inhibits the *in vitro* replication of SARS-CoV-2 in the low nM range (EC_{50} = 63 nM) [3], being five folds superior of the Merck antiviral *Molnupiravir* (EC_{50} = 300 nM), just approved for COVID-19. In this occasion, beside its design, unpublished pharmacokinetics, metabolism, toxicity as well as the *in vivo* efficacy in leukemic xenograft mouse model (IP, PO) of **MEDS433** are presented, paving the incoming certified preclinical studies necessary to Phase I clinical trial for the above pathologies.

The strategy that allowed the discovery of MEDS613, a MEDS433 backup compound superior in terms of in vitro efficacy and with a reduced toxicity profile, is also presented.

Newer models for preclinical drug testing

Dr. Vijay. L. Kumar
Professor and Head
Department of Pharmacology, AIIMS, New Delhi, India

BIODATA

Dr. V.L. Kumar is presently heading the Department of Pharmacology at AIIMS, New Delhi. She did her post-graduation from AIIMS, New Delhi and received post-doctoral training at the Institute de Chimie Biologique, Strasbourg, France. In 1987, she joined AIIMS, New Delhi as faculty and pursued her research interest on the estrogen receptor variants, EGFR gene amplification and polymorphism, and hormonal regulation of androgen receptor which have implications in the management of breast and prostate cancers. She has also been working in the area of molecular pharmacology, inflammopharmacology, repurposing of drugs and medicinal properties of the latex of the plant Calotropis procera and demonstrated its potent anti-inflammatory, analgesic and anti-pyretic properties. The latex has a therapeutic potential in conditions like arthritis, colitis, hepatocellular and colorectal cancer. She has developed several experimental models for drug testing that includes even plant based models to screen cytotoxic agents. She has guided several postgraduate students and published her research in well reputed journals. At AIIMS, New Delhi she is also looking after the functioning of National Poisons Information Centre and is currently involved in an outreach programme to create awareness about poisoning among school children, parents and occupational workers. Her talk will focus on some of the newer drug testing methods that could be useful in identifying promising and safe drug candidates.

ABSTRACT

Preclinical drug testing as part of drug development has mainly relied on experiments carried out in animals in order to identify a promising and safe drug candidate. With the advancement of technology and emphasis on developing alternative methods to animal experimentation, newer approaches are being considered to have dependable and validated methods to screen new candidate molecules for their therapeutic benefit. Although available predictive methods narrow down the range of compounds to be screened by bioassay, the relevant biological system for drug testing in a preclinical setup occupies a centre stage before in vivo experiments could be performed. Efficacy, pharmacokinetics and safety/toxicity are important aspects evaluated in preclinical studies and some of this information could be derived from in vitro experiments performed on 2D and 3D systems. Some of these newer systems include spheroids, organoids, scaffolds/hydrogels, organ-on-chips and 3D-bioprinting. The newer 3D models are organ specific and more suitable for high throughput screening. These systems will certainly cut down the need for animal experimentation to some extent but will not completely replace in vivo experimentation. The complexity of whole body and cross talk of various organs, behavior, rhythms, effect of environment etc. are some of the challenges in 3D technology. Some of the success stories of newer models will be discussed.

Transcending Brain Bioavailability Limitations of Flurbiprofen with Nose to Brain Delivery Strategy

Dr. Anuradha Majmudar
Dean, Faculty of Science and Technology, University of Mumbai, Mumbai, Maharashtra, India

BIODATA

Dr. Anuradha Majumdar, Dean of Faculty of Science and Technology, University of Mumbai, has more than 24 years of experience as an academician and scientist. Currently she is leading the newly established Centre of Excellence in Maritime Studies (CEMAS) established in the Kalina Campus of University of Mumbai in the capacity of In Charge Director. Dr. Majumdar's area of specialization is Pharmacology. Dr. Majumdar has successfully completed a significant number of Government sponsored projects including AICTE, BRNS-DAE, DBT-BIRAC, DBT, UGC Major etc. She is a consultant to Pharmaceutical and allied industries and has completed several industry sponsored projects. Recently her "Proof of Concept" on a drug delivery system platform has been selected by Cipla Ltd. in its Innoventia drive and taken up by the company for further development. She has taken up the mantle of Dean, Science and Technology since more than two years and has worked relentlessly towards upward benchmarking of academics and research at the University of Mumbai.

ABSTRACT

Nose to brain delivery is a strategy adopted for conducive molecules with central action. R-Flurbiprofen is found to have a protective effect in neuroinflammation in a number of studies. But, poor penetration through blood brain barrier on oral formulation pose a challenge to its effectiveness. This presentation narrates on the formulation development of an in-situ gelling microemulsion of flurbiprofen for Nose to Brain delivery and its evaluation in a preclinical rat model of lipopolysaccharide (LPS) induced neuroinflammation through stereotaxic surgery.

Intranasal microemulsion of R-FP was prepared and the optimized formula was used for the preparation of in situ gel. Post characterization brain bioanalysis was performed using HPLC to substantiate its adequate transit to brain from the nasal mucosa. The nasal formulation underwent thorough pharmacokinetic, cilio toxicity and dynamic testing in comparison to a marketed oral formulation. The prepared formulation of in situ gelling microemulsion had displayed improved brain bioavailability when pitched against the oral brand. The formulation shows decent promise to be scaled up to be a viable route and treatment alternative in neuroinflammation and neuroinflammation induced memory impairment. Nose to Brain delivery strategy might be a way forward to bolster brain bioavailability of several drugs with the right attributes.

Wellness Redefined"-Emerging Opportunities For Multi-Herbal Preparations In Australia: Scope And Regulations

Dr. Kanan Shah
Product development and research, Alphamed Pty. Ltd., Auburn, Australia

BIODATA

Dr. Kanan Shah is currently working at as Product Development Associate (Contract Role) at Alphamed Pty Ltd, Sydney till March 2019. Apart of this she has long healthy journey. She Worked as Part-time Pharmacist In-Charge at Pharmasave, Norwest Care Chemist Bellavista from April 2018 to February 2019. She also worked as a Business Support Consultant at The Pharmacy Guild of Australia, Sydney, Australia (March 2016-March 2018). As well as she Worked as a Pharmacist In-charge at Abbotsford Point Pharmacy, Sydney, Australia (September 2014-December 2015). She also worked as a packing/dispensing technician (Part-time) at Metropolitan Pharmacy Services, Sydney, Australia (June 2008-April 2012). And also Worked as a Contract Data Analyst (Part-time), Pharmacy Project with The Australian Lung Foundation, Sydney, Australia (July 2009-November 2009). Her journey started as an Assistant Professor and Head of the Department, Dept of Pharmacology, L.J. Institute of Pharmacy, Ahmedabad, India (May 2007-August 2007) and then she moved to Australia in August 2007. She also worked as a Lecturer, Dept. of Pharmacology, Shri S.K. Patel College of Pharmaceutical Science and Research, Ganpat Vidyanagar, Kherva, Mehsana, India (January 2004-March 2004) and worked as a Clinical Research Associate at Sterling Hospital, Ahmedabad, India (May 2002-Dec 2003) as a part of her Ph.D. work.

Nanoscale Modulation of the Neurodegenerative Disease

Dr. Sanjib Bhattacharya
Professor at Department of Pharmaceutical Science & Chinese Traditional Medicine, Southwest University, China

BIODATA

Professor Sanjib Bhattacharyya is currently working as a full professor at Department of Pharmaceutical Science & Chinese Traditional Medicine, Southwest University, China since May, 2017 and conducting research on protein misfolding and cytoskeletal disorders related to neurodegenerative disease. He did PhD from university of Missouri Columbia, USA in 2009 in Bio-organic Chemistry and Master of Science in Chemistry from IIT, Kharagpur in year 2002. He has more than 12 years of rich academic and research experience in the interdisciplinary research field of Bio-organic chemistry, biochemistry, cancer metabolism, nano drug delivery, pharmaceutical science, nanobiotechnology and transport disorders related to Alzheimer disease and dementia, and effect of dietary phytochemicals on anxiety associated disorders, artificial nano transporter to combat metabolic disorders and polymer drug delivery formulation. He has many peer-reviewed research publications in journal of high scientific impact and many prestigious awards like “Nature’s open innovation challenge award 2015”, K S Krishnan Fellow 2012, travel award, so on to his credit. He also has attended and presented many scientific papers in many conferences of international repute such as Gordon conference and ACS. He is a member of the American Chemical Society (ACS). He is also currently an adjunct Professor in Pharmaceutical Chemistry at Nirma University, Gujrat, India,

ABSTRACT

Neurodegenerative disease (ND) takes heavy tolls by ruining the quality of life in various aspects. ND can impair the cognitive function, motor activity, learning process and various other functions. Even this social disorder is known for more than half a century, not much disease modifying treatments is available beside some palliative management. However, quite a bit advance has been made about the knowledge related to the disease progression raises the hopes for better management of the socially challenging ND. My lab is currently investigating the Alzheimer disease (AD), Parkinsonism (PD), Amyotrophic Lateral Sclerosis and other among various ND that causes cognitive decline. We are trying to develop therapeutic strategy that is mechanism based and poised to reverse or ameliorate the pathological symptoms and survival. The goal is to the understand and achieve the correlation between behavioral aspects of the disease and cognitive decline using a mechanism-based treatment module. In last decades, many clinical trials have been failed to manage ND symptomatic phenotype raises concern about the correlation study and deeper understanding to facilitate the successful translation. Our lab is dedicated to regulate and modify the toxic protein that disrupts the various cytoskeletal associated process acting as a tipping point of an array of protopathic disease such as AD, PD, a few to name. We design nano-construct that has the ability to alter plasticity of malign protein responsible for inducing pathological symptoms over the period of time. This nano-construct has the ability to quality control the proteotoxic protein and kinetically stabilize them to reverse their toxic gain of function. How this nano-construct reverse protopathic phenotype such as memory deficit, cognitive function, motor movement, and other behavioral traits, is a key concern of our study. Bridging a gap between molecular cause of the ND and behavioral modulation remains a key challenge to combat the series of socially challenging ND to achieve a sensible therapeutic advance and tangible benefit for patients.

Fatty Acids as Therapeutic Agents in the Control of Immunity and Infection

Dr Dino Rotondo
Deputy director and senior lecturer in Immunology, Strathclyde, Institute of Pharmacy & biomedical sciences, University of Strathclyde, Glasgow, UK.

BIODATA

University of Strathclyde, Glasgow UK: Deputy Director of Biomolecular Programmes and is an Immunology Lecturer in the Strathclyde Institute of Pharmacy & Biomedical Sciences (SIPBS). Has carried out extensive research on polyunsaturated fatty acids (PUFAs) particularly the molecular and cellular mechanisms related to immune function. Published key research papers on PUFAs and eicosanoid metabolites in the control of cell function. Research interests include characterisation of the control of inflammatory/ immune responses by prostaglandins and their PUFA precursors and other mechanisms which overlap with these activities such as non-steroidal anti-inflammatory compounds and steroids. This work has been carried at the in vivo level studying systemic inflammation/ fever in addition to in vitro cellular interactions and the molecular mechanisms involved in these responses. This has centred on the role of monocytes in coordinating immune responses by releasing cytokines particularly interleukin-1 and tumour necrosis factor-alpha, prostaglandins and fatty acids. Early research work on dexamethasone (1987), demonstrated its systemic anti-inflammatory actions in response to double-stranded RNA mimicking viral activation. This has now become centre-stage in the use of dexamethasone (a breakthrough drug) in the treatment of Covid-19 hyperinflammation

ABSTRACT

Fatty acids (FAs) and their metabolites are well established modulators of cellular function especially in inflammatory actions where cells, particularly macrophages respond to bacteria and viruses by producing pro-inflammatory cytokines, particularly interleukin-1 and tumour necrosis factor-alpha. This sequentially induces the release of FAs from membrane phospholipids, primarily arachidonic acid for the biosynthesis of PGE2 being responsible for the symptoms of inflammation. The direct actions of FAs on the pathogens is less clear. The aims of our studies were to evaluate the effect of FAs, specifically polyunsaturated FAs (PUFAs), on both the immune response to viral stimulation and their direct effect on viral viability, specifically SARS-CoV-2.

The actions of eicosapentaenoic acid (EPA) on inflammatory responses were studied in vivo and its effects on the poly I:C-induced (double-stranded RNA) fever response was measured as a systemic inflammatory response and blood levels of mediators were measured by ELISA. The direct effects of PUFAs (linoleic acid - LA) were studied in vitro using a viral plaque reduction assay using Vero E6 cells and viable SARS-CoV-2 virus.

EPA reduced poly I:C-induced fever responses and the blood levels of both cytokines and PGE2, but this occurred after 28 days of daily administration. Following preincubation of SARS-CoV-2 with LA (2hr), no plaques were observed after incubations with Vero cells indicating the absence of viable virus.

The data indicate that exogenous PUFAs could directly control viral infection by inhibiting viral viability, whereas their effects on viral inflammatory activation may be longer term and less effective in acute responses.

PANEL DISCISSION

Moderator: Dr. Shivprakash Rathnam

PANELIST

Prof. D. K. Dhawan

Dr. Mukul Jain

Dr. C. Mallikarjuna Rao

Dr. Shivprakash Rathnam

Managing Director

Synchron Research Services Pvt. Ltd, India

BIODATA

Dr. Shivprakash Rathnam Did his B.Pharm and M.Pharm from Government College of Pharmacy in 1988 and 1990 respectively. Did his PhD from LM College of Pharmacy, Ahmedabad, in 1994. Was Head-Pharmacology Research, Zydus Cadila Healthcare up to 1996. From 1996-1998 he served Sun Pharma Advanced Research Centre (SPARC), Baroda as Head-Pre-Clinical Pharmacology and Toxicology. Started his own company Synchron Research Services Pvt. Ltd. a CRO in 1998. Synchron is the first CRO in India in Private Sector totally dedicated to BA/BE studies and Clinical Research. At present he is the Founder & Managing Director of Synchron Research. Started Avance Phytotherapies in 2003. The main aim of the company is to formulate effective therapies for those ailments for which there is insignificant allopathic intervention. Started INTERVEIN, a central lab for clinical trials in 2006. He is the Founder Chairman of the company. He is the former Chief Editor of Indian Journal of Pharmacology (2007-2009). He has more than 60 research papers published in various International and national journals. Written many articles in various magazines and book chapters. Awarded " Udyog Ratttan Award" by Institute of Economic Studies in 2008 for his contribution for the development of Clinical Research in India.

Prof. D. K. Dhawan
Professor Emeritus,
Department of Biophysics,
Panjab University, Chandigarh, India.

BIODATA

Prof. D. K. Dhawan is presently working as a Professor Emeritus in the department of Biophysics and has previously worked as Professor of Biophysics for 15 years. He also founded the Centre for Nuclear Medicine at Panjab University, Chandigarh in the year 2006 and headed the same for 9 years and was also Coordinator, Centre for Medical Physics in the year 2013. Professor Dhawan did his Ph.D. from Post Graduate Institute of Medical Education & Research, Chandigarh, India in the year 1984. Prior to his Ph.D., he worked in Radiation Medicine Centre of Bhabha Atomic Research Centre, Mumbai, India, and was awarded Post Graduate Diploma in Medical Radioisotopes Techniques in the year 1978. His research areas are radiation medicine, toxicology and cancer. He has published 225 research articles and 179 are listed in Scopus during 38 years of his research career. Prof. Dhawan has supervised 46 Ph.D. and 47 Master's theses of students and currently is supervising work of 6 Ph.D. students. He has completed 18 research projects funded by various scientific organizations. Recently, his research entitled" A radioactive trimer complex for the detection of tumors" was granted Patent by Government of India. Prof. Dhawan is a Fellow of Union for International Cancer Control, Indian Association of Biomedical Scientists and honorary fellow of Indian College of Nuclear Medicine. For his contribution in science, he was given Oration award by Indian Association of Biomedical Scientists at its 38th Annual conference held at Chennai, India and was also given best researcher award by Panjab University in the year 2019 and received best papers award twice during Medical Olympicus conference, Greece. Prof. Dhawan has been awarded University Grants Commission-Basic Science Research (UGC-BSR) Faculty Fellowship by the University Grants Commission of India in the year 2020.

Dr. Mukul Jain
Senior Vice President
Zydus Research Centre, Ahmedabad

BIODATA

Dr. Mukul Jain is a Senior Vice President at Zydus Research Centre, the New Drug Discovery Research wing of Zydus Cadila. Dr. Jain has led the team that successfully developed Saroglitazar, the first indigenously discovered & developed new drug from an Indian Pharmaceutical Company and worldÂ's first approved Â'GlitazarÂ' class drug, which is being marketed under the brand name LipaglynTM. Besides Saroglitazar, his group has also developed 11 other NCEs (New Chemical Entities) that have entered human clinical trials. He has also contributed to development of 10 recombinant biosimilar products and 8 vaccines; many of these generic products have come to market as well. Dr. Jain has a background in Pharmaceutical Sciences. He obtained his B.Pharm., M.Pharm (Pharmacology) and PhD in Medicine from Nagpur University. He also holds a diploma in Business Management from Nagpur University and a Certificate in Executive Management from IIM, Ahmedabad. After completing his PhD, he worked at Wockhardt and Ranbaxy Research Centers before moving to University of Florida at Gainesville, where he worked as Post-doc Associate for three years. He then returned to India & joined NIPER, the National Institute of Pharmaceutical Education & Research at Mohali as Assistant Professor. In the year 2000 he moved to Ahmedabad and joined Zydus Research Centre, where he developed a state of the art preclinical research facilities and obtained several quality-related accreditations for the facility from various national & international agencies. Dr. Jain has contributed to more than 38 patents as co-inventor and has more than 195 research publications to his credit, which include more than 95 full length research papers in peer-reviewed International journals. He has guided the research work of 8 PhD students and several Masters Students. Dr. Jain is a member of several National & International Scientific Associations

Dr. C. Mallikarjuna Rao
Principal
Department of Pharmacology
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BIODATA

C Mallikarjuna Rao is Principal of Manipal College of Pharmaceutical Sciences. Completed his B.Pharm and M.Pharm in Pharmacology in College of Pharmaceutical Science Manipal in 1983 and 1985 respectively and his PhD from Mangalore University in 1990 in "Wound healing" specialization. He has bright career starting from lecturer in NGSM College of Pharmacy, Nitte 1985-1986, and the moved to Department of Pharmacology, MCOPS started as lecturer in 1986, then promoted to assistant professor, Associate professor, Additional professor, Professor and Head from 1987-2004. Then he moved Manipal college of pharmaceutical sciences. And he have total 159 research output.

VALEDICTORY FUNCTION

Chief Guest: Prof. Ingolf Cascorbi

Guest of Honour: Prof. Y. K. Gupta

Prof. Ingolf Cascorbi

President, International Union of Basic & Clinical Pharmacology (IUPHAR), Germany
and Professor, Institute of Experimental and Clinical Pharmacology, UKSH, Germany

BIODATA

Professor Dr. Dr. Ingolf Cascorbi is Director of the Department of Experimental and Clinical Pharmacology, at the UKSH, Campus Kiel. He has been Dean of Studies for Medicine at the Faculty of Medicine since 2012. After successfully completing his biochemistry studies at the Freie Universität Berlin (1978-1985), he also went on to study Medicine at the Freie Universität Berlin from 1986 to 1992. During his medical studies he qualified in 1989 as Dr. rer. nat. in Chemistry. From 1994 to 1999 he worked as a research associate at the Institute of Clinical Pharmacology at Charité Universitätsmedizin Berlin. In 1998 he became a consultant for clinical pharmacology. In 1999 he qualified as a Dr. med. at the Faculty of Medicine at the Humboldt-Universität zu Berlin, and qualified to teach at professorial level in Clinical Pharmacology the same year. One year later, Ingolf Cascorbi became Professor of Pharmacology and Toxicology at the Institute of Pharmacology at the University of Greifswald. In 2004 he accepted a position as Professor of Pharmacology at Kiel University and since then he has also been Head of the Institute of Pharmacology.

Professor Cascorbi's primary research focus is on the pharmacogenetics of drug metabolising enzymes and membrane transporters, the association with cancers, genetic risk factors of cardiovascular diseases and their functional characterisation.

Application Of Pharmacogenomics In Psychiatric Practice

Prof. Y. K. Gupta
President, AIIMS, Bhopal, India and AIIMS Jammu and Former Dean AIIMS Delhi

BIODATA

Professor Y K Gupta, MBBS, MD Pharmacology (1979) is currently the President, All India Institute of Medical Sciences (AIIMS) -Bhopal and President, AIIMS - Jammu. Additionally, he is Principal Advisor, India Strategy Development – Global Antibiotic Research and Development Partnership (GARDP) and Drugs for Neglected Diseases Initiative (DNDi). He was earlier Dean and Head of Pharmacology, AIIMS, New Delhi. He is Vice Chairman of Standing National Committee on Medicines (SNCM), MoHFW, GOI, Member, Standing Committee on Affordable Medicines and Health Products (SCAMHP). He is Member of Governing Body, National Dope Testing Lab, GOI, National Institute of Immunology, DBT, Regional Centre of Biotechnology, DBT, Chairman National GLP Technical Committee, DST, Chairman, Bharat Immunologicals and Biologicals Corporation Limited (BIBCOL). He is President, National Society of Alternatives to Animals. He has been founder President, Indian Society of Nanomedicine and Former President, Indian Pharmacological Society. He is National Scientific Co-Ordinator, Pharmacovigilance Program of India, Convener, India Initiate Programme, Indian Pharmacological Society (IPS). Dr Gupta earlier served as Director CSIR- IITR (Indian Institute of Toxicology and Research), Lucknow. Dr. Gupta has been honoured with several fellowships and awards notably, National Academy of Medical Sciences (FAMS), Indian Pharmacological Society (FIPS), National Academy of Science (FNASc), Indian Academy of Neurosciences (FIAN) and Society of Toxicology (India) (FST). He has more than 390 publications in International and National journals. He is Member of task force/ PAC/ PRC of DST, DBT, ICMR & CSIR.

Dr. Gupta was Chairman of a sub-committee (Industry – academia collaboration for pharmaceutical research and product development under chairmanship of Secretary, Department of Pharmaceuticals). He has been actively involved with NPPA (DOP) for several years as an expert committee member. He has also been in actively involved in different capacities (such as Chairman, Member) of Academic Committee, Selection Committee of NIPERs (NIPER Mohali, NIPER Hyderabad, NIPER Ahmedabad, NIPER Raibarely, NIPER Hajipur & NIPER Guwahati).

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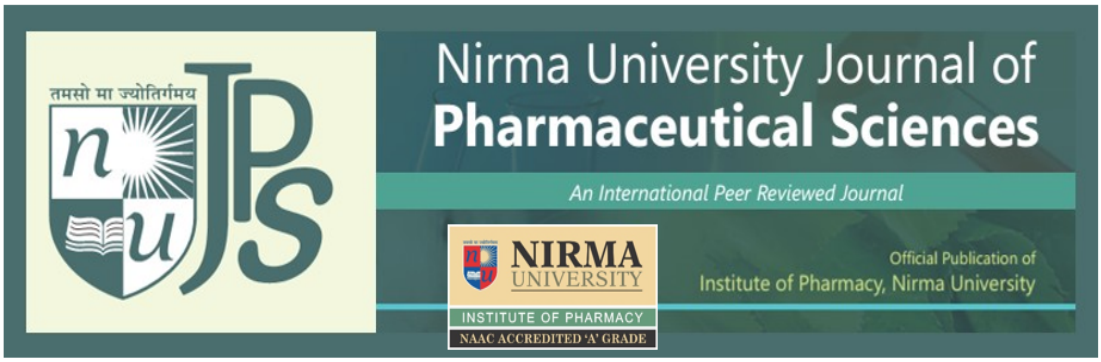

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