



The NGSMIPS Herald

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Institute of Pharmaceutical Sciences, Mangalore



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ZIKA VIRUS - WHAT YOU NEED TO KNOW

VISION

To build a humane society through excellence in education and health care.

MISSION

To develop Nitte University as a centre of excellence, imparting quality education, generating competent, skilled manpower to face the scientific and social challenges with a high degree of credibility, integrity, ethical standards and social concern.

'For Private Circulation Only'



From the Editor's desk

The Ministry of Micro, Small and Medium Enterprises, Government of India has launched the national manufacturing competitiveness programme (NMCP) to improve the competitiveness of Micro, Small and Medium Enterprises (MSME) sector. The objectives of the programme are to support manufacturing sector to improve competitiveness through quality management, promotion of ICT, technology and quality upgradation, marketing support, creating awareness in IPR issues through its business incubators (BIs).

Nitte University has been granted a business Incubator by the ministry. The entrepreneurs with original ideas that will lead to a new product/design/procedure and enhance the productivity and reduce the cost, can submit their proposals to the BIs for funding. Each approved proposal will get a grant of 4-8 lakhs to support students/ex-students of science and technology and entrepreneurs to try out their innovative ideas at the laboratory or workshop stage from 'know how' to 'do how' stage.

The scheme is designed for sustaining the ideas that would have been otherwise lost for want of support. The application form is available in the Nitte University website, www.nitte.edu.in. Detailed information is also available in the MSME website, www.dcmsme.gov.in. The applicants may send their proposal to: numsmebi@nitte.edu.in. We look forward to an active participation in this path breaking initiative of the government by all those who have innovative ideas.

Dr. C.S. Shastry
Editor-in-Chief

Seminars at NGSMIPS

A one day national seminar on 'Nanotechnology: A Multi-Disciplinary Approach to Research'



One day seminar on "Challenges and Opportunities in Pharmacy Practice"



CAMPUS BUZZ

Vigilance awareness program at NGSMIPS

In pursuance of the directive issued by the Chairman, AICTE that Vigilance Awareness Week October 26 -31, 2015 should be observed by institutions, NGSMIPS organized a lecture and panel discussion for students



Video of the message from the Secretary, Ministry of HRD - Government of India, played for the students

on October 31, 2015. The objective of this program was to create awareness among the youth about the significance of "Preventive Vigilance and importance of moral values and strong character".

The Vice Principal, Dr. R.Narayana Charyulu and members of the faculty held panel discussions with the students. Dr. Charyulu, in his introductory remark, stressed the need to include character education in the syllabus. He said that it is unfortunate that modern education places more emphasis on competence than character. He also said that 'competence in basic skills, feelings of self-worth, and moral development should be priorities in schools and colleges'. Students volunteered with series of presentations on the above theme. A video of the message from the Secretary, Ministry of Human Resource Development - Government of India, Chairman and Vice Chairman of AICTE was played for the benefit of the students.

Seminars

The Department of Pharmaceutical Chemistry organized a one day Nitte University sponsored seminar on 'Computer Aided Drug Design and Development' on 26th November 2015. The seminar which was held at



Inauguration of the one day seminar on 'Computer Aided Drug Design and Development' by Dr. M. S. Moodithaya

the Nitte University Auditorium, Nitte Institute of Architecture (NIA), Paneer Campus was inaugurated by Dr. M. S. Moodithaya, Registrar, Nitte University. The resource persons were, Dr. Evans

Cutinho, Professor and HOD – Pharmaceutical Chemistry, Bombay College of Pharmacy who spoke on Methods in Molecular Modeling, Dr. Mahesh B. Palkar, Associate Professor, KLE College of Pharmacy, Hubli

who lectured on "Structure Based Drug Design", and Dr. Balakrishna Kalluraya, Professor, Department of Organic Chemistry, Mangalore University who spoke on "Principles and Application of IR Spectroscopy".

A one day national seminar on 'Nanotechnology: A Multi-Disciplinary Approach to Research' was organized by the Department of Pharmaceutics on 4th December 2015. The seminar was inaugurated by Professor Rajshekar, Director of Curriculum Development Cell, Nitte University and Dr. Indrani Karunasagar, Director of R&D, Nitte University was also present. Sponsored by the Nitte University and NGSM Institute of Pharmaceutical Sciences Alumni Association (NIPSAA), this seminar was attended by delegates from institutions in and around Mangalore. Four scientists, renowned in the field of nanotechnology in science and medicine delivered lectures on topics such as, 'Nanotechnology in drug delivery', 'Surface Chemistry of nanomaterials', 'Targeting Oncoproteins with monoclonal antibodies' and 'Nano & Bio interfaces with improved functionality'. The resource persons were Dr. R. S. R. Murthy, Research Professor, MSR University for Applied Sciences, Bengaluru; Dr. Dattatri K. Nagesha, Head, Faculty of Applied Sciences, JSS University, Mysuru; Dr. Mahaveer Kurkuri, Associate Professor, Centre for Nano & Material Sciences, Jain University, Bengaluru and Dr. Asha Srinivasan, Faculty, Life Sciences. JSS University, Mysuru.

The Department of Pharmacy Practice organized a one day seminar on "Challenges and Opportunities in Pharmacy Practice" on 7th December 2015 at the Seminar hall, Justice K S Hegde Charitable Hospital, Deralakatte, Mangalore. This Nitte University sponsored seminar was designed to keep Pharmacists in health care, abreast of the latest developments and opportunities in the field of pharmacy practice. The resource persons for the conference were Dr. KG Revikumar, Director and Principal, Kerala Institute for Drug Studies, Kerala; Dr. Veena R, Senior Lecturer, University College of Pharmacy, M. G. University, Kottayam, Kerala and Dr. Sampath Kumar, Associate Professor, Department of General Medicine, KSHEMA, Deralakatte.

Guest lectures organized at NGSMIPS



Mr. Devaraj Shetty

A guest lecture on "Computer System Validation and 21 CFR, Part 11" was arranged by Department of Pharmaceutics on 25th November 2015 at NGSMIPS. The guest speaker was Mr. Devaraj

Shetty, DGM – Quality, Reliance Life Sciences, Dhirubhai Ambani Life Sciences Centre.



Mr. Girish Sharma

A guest lecture was organized by Nitte University Center for Animal Research and Experimentation (NUCARE) on “Regulatory Toxicology” on 25th November 2015 at NGSMIPS. The lecture

was delivered by Mr. Girish Sharma, Co-Founder and Director for Business Development, FLAIR labs, Surat, Gujarat. The different aspects of toxicology and its importance in drug development process were discussed.

Best poster presentation awards for NGSMIPS faculty

Three of the young teaching faculty of NGSMIPS brought laurels to the institution when they won awards for their research papers presented at conferences.

Mr. M. Vijay Kumar, Asst. Professor, Department of Pharmaceutical Chemistry was awarded 1st prize for the poster presentation of his research paper entitled, “Synthesis, Antidepressant and Antiarthritic activity of novel Pyrazolone Derivatives” at the 5th International Conference held in PES College of Pharmacy, Bangalore on 17th and 18th October 2015. At the same conference, Dr. Jainey P. James, Asst. Professor, also from the same department, was awarded 2nd prize for the poster of her research paper entitled, “Microwave Synthesis and Biological activity studies of Pyrazol-1-Carboxamide derivatives”

Mrs. Sneh Priya, Asst. Professor, Department of Pharmaceutics was awarded 2nd prize for her research paper entitled, “A study of ropinirole hydrochloride nanoemulsion for delivery into the brain through intranasal route” presented as poster at the National Seminar on Novel Pharmaceutical Technologies: Challenges and opportunities organized by IAPST held in Manipal College of Pharmacy, Manipal, 15th November 2015.

Guest Lectures by NGSMIPS faculty

Dr. Marina Koland, Professor, Department of Pharmaceutics was invited as a resource person at the Fourth Annual Symposium of the Society of Biological Chemists, Coastal Karnataka Chapter, 14th November, 2015 where she delivered a lecture on, “Nanoparticles as drug carriers for controlled release and targeting”. This symposium was organized by the Nitte University Centre for Science Education and Research, Paneer Campus, Mangalore.

Dr. K. Ishwar Bhat, Professor and Head, Department of Pharmaceutical Chemistry delivered a guest lecture on 28th November 2015, “Thermodynamic properties and Chemical reactions” in a workshop organized by Delhi Public School, Bokaro, Steel City, Ranchi.

Dr. Murali Badanthadka, Deputy Director, NUCARE was invited to speak at the International Symposium on “Translational Research in Drug Discovery and Diagnostics” held on 22nd October, 2015 at K. B. Institute of Pharmaceutical Education and Research, Gandhinagar, Gujarat. He spoke on the topic, “Multiple Targets to Treat Neuropathic Pain: What to Choose?”

Blood Donation Camp

The NSS Unit of NGSM Institute of Pharmaceutical Sciences participated in a Blood Donation Camp



The NSS Unit of NGSMIPS at Wenlock Hospital, Mangalore

organized by Wenlock Hospital, Mangalore in the hospital premises on 12th October, 2015. Sri U. T. Kader, Minister of Health, Govt. of Karnataka was the Chief Guest on the occasion.

Several students of NGSM Institute of Pharmaceutical Sciences donated blood during the camp.

Cultural Competitions

A series of class wise competitions covering cultural talents of all kinds were organized from 30th November – 2nd December, 2015 in the college campus under the banner “Festin O Beats” were conducted. Students participated in various events such as Twins’ Day, Floral Arrangement, Face Painting, Rangoli, Slow Bike Race, Class Exhibition, Cooking without Flame, Nail Art, Antakshari, Mehendi and Traditional Day.

Sports Day

The Annual Athletic Meet of NGSM Institute of Pharmaceutical Sciences, Paneer was held on 19th November 2015 at Mangalore University Grounds, Konaje. Several events were organized and coordinated by the Physical Director, Mr. Rajaram Shetty and his team of faculty and student volunteers. The individual championship for men was bagged by Mr. Aboobakar Yasir of III B.Pharm and that for women by Ms. Thriprithi Shetty of I M.Pharm.

DEPARTMENT ACTIVITIES

DEPARTMENT OF PHARMACEUTICAL CHEMISTRY

PAPERS PRESENTED AT CONFERENCES

Dr. Jainey P. James, Asst. Professor, presented a poster on her research paper entitled, "Cytotoxicity Studies of Some Synthesized Novel Cyanopyridines" at the National Seminar on Novel Pharmaceutical Technologies: Challenges and opportunities organized by IAPST held in Manipal College of Pharmacy, Manipal on 15th November 2015.

Mr. Vijay Kumar M, Asst. Professor, gave an oral presentation of his research paper entitled, "Synthesis and In-vitro Evaluation of Novel Pyrazolone Derivatives" at the UGC Sponsored National conference on 'New Approaches and Concepts in Microbial technology'

DEPARTMENT OF PHARMACEUTICS

RESEARCH PUBLICATIONS

Dr. R. Narayana Charyulu, Professor

1. Formulation and Evaluation of Gastroretentive Bilayered Floating tablets of Famotidine: Effect of Formulation Variables and in vitro - in vivo evaluation. Trends in Drug Delivery 2015; 2(3): 1-17
2. Design and Development of Sustained Release of Tablets using solid dispersion of Beclomethasone Dipropionate. Research Reviews: A Journal of Drug Formulations, Development and Production 2015; 2 (3): 30-41

Dr. Marina Koland, Professor

Formulation and Evaluation of Pulsatile Drug Delivery Systems of Glipizide for the management of Type II Diabetes mellitus. Journal of Drug Delivery & Therapeutics. 2016; 6(1):11-18

Mr. Sandeep D.S., Asst. Professor

Formulation and in vitro evaluation of oral fast dissolving tablets of a novel antidepressant drug by using Camphor as a subliming agent. Research Reviews: A Journal of Drug Formulations, Development and Production 2015; 2 (3): 12-18

PAPERS PRESENTED AT CONFERENCES

Mrs. Sneh Priya, Asst. Professor, presented a Poster entitled, "Formulation and characterization of ropinirole hydrochloride nanoemulsion" at

the 5th International Conference held in PES College of Pharmacy, Bangalore on 17th and 18th October 2015.

At the same conference, **Mr. Sandeep D. S.**, presented a Poster of his research paper entitled, "Formulation and Evaluation of melt-in-mouth tablets of a novel antidepressant drug by superdisintegrant addition method"

PAPERS PRESENTED BY STUDENTS

The following PG students presented their research papers as posters at the 5th International Conference held in PES College of Pharmacy, Bangalore on 17th and 18th October 2015

1. **Ms. Vineetha K** Formulation and Evaluation of Biodegradable Injectable In Situ Gelling System of Rivastigmine Tartrate
2. **Ms. Tonse Rehab Mohd. Ali** Development and Evaluation Of Flupirtine Maleate Transdermal Patch containing different Permeation Enhancers
3. **Ms. Deeksha U Suvarna** Estimation of Amoxicillin Trihydrate And Ciprofloxacin from the different marketed brands Of tablets By UV Spectroscopy
4. **Ms. Shwetha Shetty** A Novel Approach for Design and Characterization of Ganciclovir In Situ Gels
5. **Mr. Arjun Muralidharan** Design and Development of Sustained Release Tablets Containing Solid Dispersion of Corticosteroids.

DEPARTMENT OF PHARMACOLOGY

PAPERS PRESENTED BY STUDENTS

Ms. Shubhangi Suryawamshi, II M.Pharm, presented a Poster of her research paper entitled, "Evaluation of Anti- Obesity Potential of Euphorbia Hirta against Cholesterol and Triton Induced Obesity in Rats" at the 5th International Conference held in PES College of Pharmacy, Bangalore on 17th and 18th October 2015.

At the same conference, **Ms. Zeena D'souza**, II M.Pharm, presented a Poster of her research paper entitled, "Analgesic and Anti- Inflammatory Activity of Ethanolic Extract of Persea Americana Bark".

DEPARTMENT OF PHARMACY PRACTICE

PAPERS PRESENTED AT CONFERENCES

Mr. Bharath Raj K. C., Asst. Professor, presented a Poster of his research paper entitled, "Evaluation of

antioxidant activity of leaves of *Sapindus Trifoliatus* linn” at the 5th International Conference held in PES College of Pharmacy, Bangalore on 17th and 18th October 2015.

DEPARTMENT OF PHARMACOGNOSY PAPERS PRESENTED AT CONFERENCES

Dr. Divya Jyothi, Asst. Professor, presented a poster entitled, “Formulation and Evaluation of an Herbal Anti-

Inflammatory Gels Containing Fenugreek Extract” at the 5th International Conference held in PES College of Pharmacy, Bangalore on 17th and 18th October 2015.

She has also presented a poster of her research paper entitled, “Formulation of antidiabetic capsule formulations containing extracts of fenugreek” at the National Seminar on Novel Pharmaceutical Technologies: Challenges and opportunities organized by IAPST held in Manipal College of Pharmacy, Manipal on 15th November 2015.

ZIKA VIRUS (ZIKV) – WHAT YOU NEED TO KNOW

Compiled by: **Mr. Gladyston Netto**
I Year M.Pharm (Pharmaceutics)

Viruses have been referred to since ancient times. However, the exact origin of these tiny organisms that carry only the genetic information in a protein coat is still unknown. Many viruses cause no harm or disease; however some viruses may attack certain cells and multiply within them.

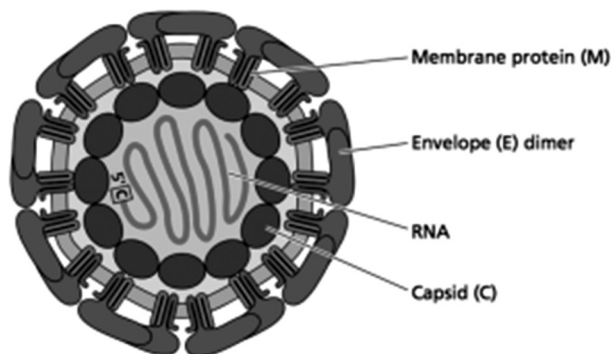


Fig: 1. Structure of Zika virus

Humans have been battling viruses since before our species had even evolved into its modern form. For some viral diseases, vaccines and antiviral drugs have allowed us to keep infections from spreading widely, and have helped sick people recover. For one disease smallpox we have been able to eradicate it, But as the Ebola outbreak now devastating West Africa.

The World Health Organization has recently declared the Zika virus a global public health emergency. Scientists say a study involving pregnant women in Brazil strengthens the theory that Zika is causing infections in pregnant woman and leads to defects in new born babies.

HISTORY AND ORIGIN OF THE ZIKA VIRUS

The zika virus was first isolated from the febrile sentinel rhesus monkey and from a pool of *Aedes africanus* mosquitoes in the Zika forest in Uganda during a yellow fever study. The first human infection with ZIKV was reported in Nigeria in 1954

From its discovery until 2007, confirmed cases of Zika virus infection from Africa and Southeast Asia were rare. In 2007, however, a major epidemic occurred in Yap Island, Micronesia.

More recently, epidemics have occurred in Polynesia, Easter Island, the Cook Islands and New Caledonia.

The first outbreak of the disease outside of Africa and Asia was in April 2007, on the island of Yap in the Federated States of Micronesia.

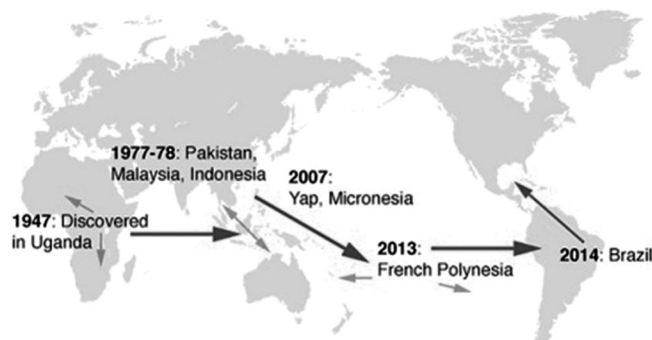


Fig:2 The spread of Zika virus from Uganda in Africa

POTENTIAL COMPLICATIONS OF ZIKA VIRUS DISEASE

Transmission:

Zika virus is transmitted through the bite of an infected *Aedes* species mosquito. A mosquito becomes infected when they feed on a person already infected with the virus. Infected mosquitoes can then spread the virus to other people through bites.

Signs and Symptoms

The incubation period of Zika virus disease is not clear, but is likely to be a few days. The symptoms are similar to other arbovirus infections such as dengue, and include fever, skin rashes, conjunctivitis, muscle and joint pain, malaise, and headache. These symptoms are usually mild and last for 2-7 days.

Effect of Zika Virus in pregnant woman and new born babies

Zika virus can be passed from a mother to her fetus during pregnancy. It is important that pregnant women see a doctor if they develop a fever, rash, joint pain, or red eyes during their trip or within 2 weeks after traveling to a country where Zika has been reported.



Fig: 3. Microcephaly in new born babies as a result of infected mothers

In newborn babies they are being affected with Microcephaly, it is a condition where a baby's head is much smaller than expected. During pregnancy, a baby's head grows because the baby's brain grows. Microcephaly can

occur because a baby's brain has not developed properly during pregnancy or has stopped growing after birth, which results in a smaller head size.

DIAGNOSIS

1. Laboratory testing for the presence of Zika virus RNA in the blood or other body fluid such as urine and saliva.
2. The diagnosis can be done by viral genome detection by genomic amplification (Reverse transcription-polymerase chain reaction) and viral isolation.

TREATMENT

1. There is no vaccine to prevent or specific medicine to treat Zika infections.
2. Treat the symptoms:
 - Get plenty of rest.
 - Drink fluids to prevent dehydration.
 - Take medicine such as acetaminophen to relieve fever and pain.
 - Do not take aspirin and other non-steroidal anti-inflammatory drugs.

- If you are taking medicine for another medical condition, talk to your healthcare provider before taking additional medication.
- If you have Zika, prevent mosquito bites for the first week of your illness.

CONCLUSION

Human Zika virus infection appears to have changed in character while expanding its geographical range. The change is from an endemic, mosquito-borne infection causing mild illness across equatorial Africa and Asia, to an infection causing, from 2007 onwards, large outbreaks, and from 2013 onwards, outbreaks linked with neurological disorders including Guillain-Barré syndrome and microcephaly across the Pacific region and the Americas. The future transmission of Zika infection is likely to coincide mainly with the distribution of Aedes mosquito vectors, although there may be rare instances of person-to-person transmission (other than mother to child, e.g. through semen). Beyond the range of mosquitos, infection has been, and will continue to be, carried widely by international travel.

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RECENT EPIDEMICS AROUND THE WORLD

The Zika virus outbreak recently has forced the WHO to declare it as an International Public Health Emergency prompted by a growing concern that it is linked to birth defects and neurological disorders including paralysis. But there have been several serious epidemics in the recent years that have been a cause of great concern. Here is a time line of some of the most devastating epidemics that have rocked this planet from the beginning of the millennium.

1. 2001 - Anthrax in the USA
2. 2002-2003 – SARS (Severe Acute Respiratory Syndrome) in South Asia
3. 2004 – Leishmaniasis in Afghanistan.
4. 2005 – Yellow Fever in Mali
5. 2005 - 12 African countries. Benin, Burkina Faso, Cameroon, Ivory Coast, Ghana, Guinea, Liberia, Mali, Nigeria, Senegal, Sierra Leone, and Togo.
6. 2006 – Chikungunya in India
7. 2008 – Bubonic Plague in Madagascar.
8. 2009 – Hepatitis B in Gujarat, India
9. 2009-2010 – Meningitis in West Africa
10. 2009-2010 – Flu / Swine Flu worldwide
11. 2010-2011 – Cholera in Haiti (Hispaniola)
12. 2011-till date – Hand, Foot and Mouth Disease in Vietnam.
13. 2012 – Middle East Respiratory Syndrome (MERS) in the Middle East.
14. 2014 – Encephalitis in India.
15. 2014 – Ebola in West Africa.
16. 2015 - to date – Zika virus outbreak in Mexico, Central America, the Caribbean, and South America.

“Festin O Beats”
30th November – 2nd December, 2015



Annual Athletic Meet - 19th November 2015



Book Post