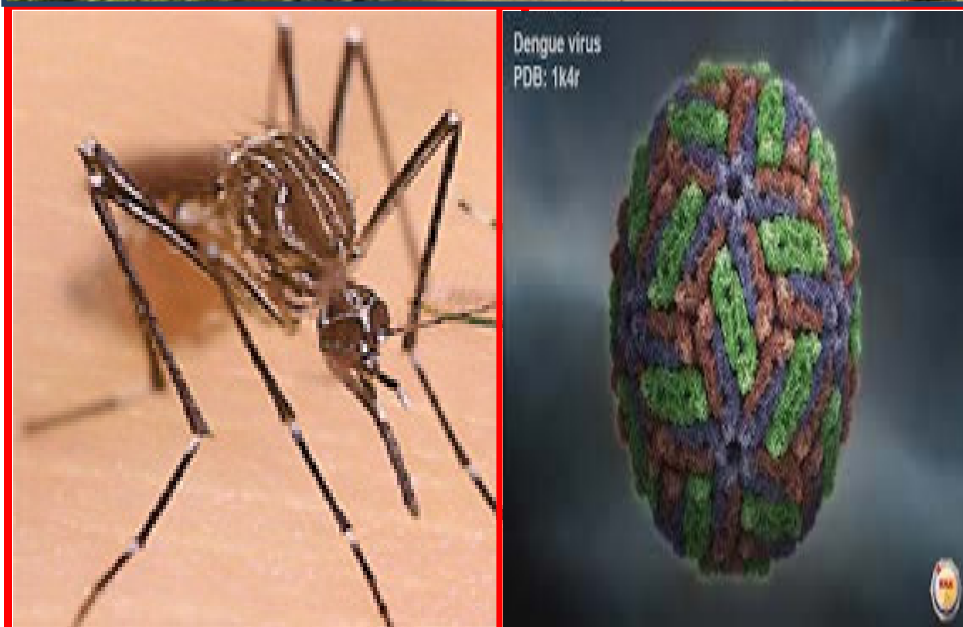


## Vision

TO GROW AS A CENTRE OF EXCELLENCE IN THE FIELD OF  
PHARMACEUTICAL AND BIOLOGICAL SCIENCE



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**EDITOR:** Soumya Bhattacharya

**GURU NANAK INSTITUTE OF PHARMACEUTICAL SCIENCE AND  
TECHNOLOGY**

16-08-2013

## MESSAGE FROM GNIPST

**GNIPST BULLETIN** is the official publication of **Guru Nanak Institute of Pharmaceutical Science & Technology**. All the members of GNIPST are proud to publish the 28<sup>th</sup> Volume of “GNIPST BULLETIN”. Over the last two years this bulletin updating readers with different scientific, cultural or sports activities of this prestigious institute and promoting knowledge of recent development in Pharmaceutical and Biological Sciences. Student’s section is informing readers about some curious facts of drug discovery, science, sports and other relevant fields. We look forward to seeing your submission and welcome comments and ideas you may have.

## LETTER TO THE EDITOR.

## NEWS UPDATE

### △ **Blood Pressure Cuff right before heart surgery cuts heart damage** (16<sup>th</sup> August, 2013)

A new study by University School of Medicine Essen in Germany shows that inflating a blood pressure cuff on a patient's upper arm just before heart bypass surgery reduces heart damage and may improve long-term survival. This practice, called "remote ischemic preconditioning," involves using the blood pressure cuff to briefly cut off, and then restore, blood supply to an area of the body distant from the heart, such as the arm. [Read more](#)

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△ **HIV patients get a mental lift from exercise** (16<sup>th</sup> August, 2013)

Regular exercise can give a brain boost to people with HIV, according to a new study, conducted by University of California, San Diego. Trouble with memory and thinking, something doctors call "neurocognitive impairment," affects nearly half of people infected with HIV. It can interfere with the ability to do daily tasks such as handling finances, driving and taking medication as scheduled. Exercise may reduce or potentially prevent neurocognitive impairment in HIV-infected persons. [Read more](#)

△ **Chemotherapy before radiotherapy for testicular cancer could reduce long-term side-effects** (16<sup>th</sup> August, 2013)

A new study reports shows, giving men with testicular cancer a single dose of chemotherapy alongside radiotherapy could improve the effectiveness of treatment and reduce the risk of long-term side-effects. The researchers showed that giving chemotherapy drug carboplatin before radiotherapy could reduce relapse rates compared with radiotherapy alone cutting the numbers of men who would need follow up treatment. [Read more](#)

△ **Sleep Apnea may be linked to glaucoma** (16<sup>th</sup> August, 2013)

People with sleep apnea are at increased risk for glaucoma and should be screened for the eye disease, a new study suggests. [Read more](#)

△ **More potent anti-clotting drugs with angiography may benefit patients with acute chest pain** (15<sup>th</sup> August, 2013)

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In a new report from the TRILOGY ACS trial from Brigham and Women's Hospital (BWH) and Duke Clinical Research Institute (DCRI), in patients without artery-clearing procedures, those who had an angiography (a type of x-ray to view the inside of blood vessels) followed by prasugrel (Effient) had fewer heart attacks and strokes compared to those who had an angiography followed by clopidogrel (Plavix). Prasugrel is a stronger blocker of blood-clotting cells called platelets compared to clopidogrel. This benefit of prasugrel was not seen in patients who did not have angiography.

[Read more](#)

△ **Obese kids more likely to have asthma, with worse symptoms** (7<sup>th</sup> August, 2013)

Overweight and obese kids are more likely to struggle with asthma than kids of normal weight, according to a new review of more than 623,000 children. Researchers found that children carrying extra weight are between 1.16 to 1.37 times more likely to develop asthma than normal-weight kids, with the risk growing as their body-mass index [Read more](#)

△ **Gold 'nanoprobes' hold the key to treating killer diseases** (7<sup>th</sup> August, 2013)

Researchers at the University of Southampton, in collaboration with colleagues at the University of Cambridge, have developed a technique to help treat fatal diseases more effectively. Dr Sumeet Mahajan and his group at the Institute for Life Sciences at Southampton are using gold nanoprobes to identify different types of cells, so that they can use the right ones in stem cell therapies. [Read more](#)

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△ **Genes that drive brain cancer revealed** (7th August, 2013)

A team of researchers at the Herbert Irving Comprehensive Cancer Center at Columbia University Medical Center has identified 18 new genes responsible for driving glioblastoma multiforme, the most common and most aggressive form of brain cancer in adults. [Read more](#)

 **HEALTH AWARENESS**

**Dengue-a deadly disease**

Like malaria and AIDS, dengue infection is a leading cause of illness and death in the tropics and subtropics. As many as 100 million people are infected yearly.

Severe dengue (previously known as Dengue Haemorrhagic Fever) was first recognized in the 1950s during dengue epidemics in the Philippines and Thailand. Today, severe dengue affects most Asian and Latin American countries and has become a leading cause of hospitalization and death among children in these regions.

Dengue is caused by any one of four related viruses (DEN-1, DEN-2, DEN-3 and DEN-4) transmitted by mosquitoes. Recovery from infection by one provides lifelong immunity against that particular serotype. However, cross-immunity to the other serotypes after recovery is only partial and temporary. Subsequent infections by other serotypes increase the risk of developing severe dengue.

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## Transmission:

The primary vector of dengue is *Aedes aegypti* and other related species of *Aedes*. The virus is transmitted to humans through the bites of infected female mosquitoes. After virus incubation for 4–10 days, an infected mosquito is capable of transmitting the virus for the rest of its life.

Infected humans are the main carriers and multipliers of the virus, serving as a source of the virus for uninfected mosquitoes. Patients who are already infected with the dengue virus can transmit the infection (for 4–5 days; maximum 12) via *Aedes* mosquitoes after their first symptoms appear. The *Aedes aegypti* mosquito lives in urban habitats and breeds mostly in man-made containers. Unlike other mosquitoes *Ae. aegypti* is a daytime feeder; its peak biting periods are early in the morning and in the evening before dusk. Female *Ae. aegypti* bites multiple people during each feeding period.

*Aedes albopictus*, a secondary dengue vector in Asia, has spread to North America and Europe largely due to the international trade in used tyres (a breeding habitat) and other goods (e.g. lucky bamboo).

## Symptoms and clinical features:

The principal symptoms of dengue are:

- High fever and at least two of the following:
  - Severe headache
  - Severe eye pain (behind eyes)
  - Joint pain
  - Muscle and/or bone pain
  - Rash
  - Mild bleeding manifestation (e.g., nose or gum bleed, petechiae, or easy bruising)
  - Low white cell count

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Generally, younger children and those with their first dengue infection have a milder illness than older children and adults. The warning signs as temperature declines 3 to 7 days after symptoms began.

The following symptoms are characteristics for immediate emergency supports.

- Severe abdominal pain or persistent vomiting
- Red spots or patches on the skin
- Bleeding from nose or gums
- Vomiting blood
- Black, tarry stools (feces, excrement)
- Drowsiness or irritability
- Pale, cold, or clammy skin
- Difficulty breathing

Dengue hemorrhagic fever (DHF) is characterized by a fever that lasts from 2 to 7 days, with general signs and symptoms consistent with dengue fever. This marks the beginning of a 24 to 48 hour period when the smallest blood vessels (capillaries) become excessively permeable (“leaky”), allowing the fluid component to escape from the blood vessels into the peritoneum (causing ascites) and pleural cavity (leading to pleural effusions).

This may lead to failure of the circulatory system and shock, and possibly death without prompt, appropriate treatment. In addition, the patient with DHF has a **low platelet count and hemorrhagic manifestations**, tendency to bruise easily or have other types of skin hemorrhages, bleeding nose or gums, and possibly internal bleeding.

#### Treatment:

There is no specific treatment for dengue fever. Most of the cases the treatment is symptomatic. The patient should rest, drink plenty of fluids to prevent dehydration, avoid mosquito bites while febrile and consult a physician. As with dengue, there is no specific medication

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for DHF. If a clinical diagnosis is made early, a health care provider can effectively treat DHF using fluid replacement therapy.

For severe dengue, medical care by physicians and nurses experienced with the effects and progression of the disease can save lives – decreasing mortality rates from more than 20% to less than 1%. Maintenance of the patient's body fluid volume is critical to severe dengue care. Sometimes blood transfusion is required to save lives.

### Prevention and control

*Aedes aegypti*, the principal mosquito vector of dengue viruses is closely associated with humans and their dwellings. People not only provide the mosquitoes with blood meals but also water-holding containers in and around the home needed to complete their development. The mosquito lays her eggs on the sides of containers with water and eggs hatch into larvae after a rain or flooding. A larva changes into a pupa in about a week and into a mosquito in two days.

As per WHO, the only method to control or prevent the transmission of dengue virus is to combat vector mosquitoes through:

- preventing mosquitoes from accessing egg-laying habitats by environmental management and modification;
- disposing of solid waste properly and removing artificial man-made habitats;
- covering, emptying and cleaning of domestic water storage containers on a weekly basis;
- applying appropriate insecticides to water storage outdoor containers;
- using of personal household protection such as window screens, long-sleeved clothes, insecticide treated materials, coils and vaporizers;
- improving community participation and mobilisation for sustained vector control;
- applying insecticides as space spraying during outbreaks as one of the emergency vector control measures;

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- active monitoring and surveillance of vectors should be carried out to determine effectiveness of control interventions.

## DISEASE OUTBREAK NEWS

### △ Poliovirus detected from environmental samples in Israel (15<sup>th</sup> August, 2013)

The World Health Organization (WHO) estimates the risk of further international spread of wild poliovirus type 1 (WPV1) from Israel to remain moderate to high. This risk assessment reflects evidence of increasing geographic extent of circulation over a prolonged period of time. [Read more](#)

## FORTHCOMING EVENTS

- △ The 2<sup>nd</sup> Pharm. Tech IAPST International Conference on "New insights into diseases and recent therapeutic approaches" from 17<sup>th</sup> to 19<sup>th</sup> January 2014 in Kolkata, India. [Read more](#)

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## DRUGS UPDATES

### △FDA Approves Injectafer for Iron Deficiency Anemia

[Injectafer](#) (ferric carboxymaltose injection) has received U.S. Food and Drug Administration (FDA) approval. Injectafer is a parenteral iron replacement product used for the treatment of iron deficiency anemia (IDA) in adult patients who have intolerance to oral iron or have had an unsatisfactory response to oral iron. Injectafer is also indicated for iron deficiency anemia in adult patients with non-dialysis dependent chronic kidney disease (NND-CKD). [Read more](#)

### △FDA permits marketing of first U.S. test labeled for simultaneous detection of tuberculosis bacteria and resistance to the antibiotic rifampin (25<sup>th</sup> July)

The U.S. Food and Drug Administration today allowed marketing of the Xpert MTB/RIF Assay, the first FDA-reviewed test that can simultaneously detect bacteria that cause tuberculosis (TB) and determine if the bacteria contain genetic markers that makes them resistant to rifampin, an important antibiotic for the treatment of TB. [Read more](#)

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## **CAMPUS NEWS**

△ *Azalea (exotic flower)* , the fresher welcome programme for newcomers of GNIPST in the session 2013-14 was held on 8<sup>th</sup> August in GNIPST Auditorium

△ One day seminar cum teachers' development programme for school teachers on the theme of “Recent Trends of Life Sciences in Higher Education” organized by GNIPST held on 29<sup>th</sup> June, 2013 at GNIPST auditorium. The programme was inaugurated by Prof . Asit Guha, Director of JIS Group, Mr. U.S. Mukherjee, Dy Director of JIS Group and Dr. Abhijit Sengupta, Director cum Principal of GNIPST with lamp lighting. The programme started with an opening song performed by the B.Pharm students of this institute. The seminar consists of a series of lectures, video presentations and poster session. On the pre lunch session 4 lectures were given by Dr. Lopamudra Dutta, Mr. Debabrata Ghosh Dastidar, Ms. Swati Nandy and Ms. Tamalika Chakraborty respectively. On their presentation the speakers enlighten the recent development of Pharmacy, Genetics and Microbiology and their correlation with Life Sciences. On the post lunch session, Ms. Saini Setua and Ms. Sanchari Bhattacharjee explained the recent development and career opportunities in Biotechnology and Hospital Management. The programme was concluded with valedictory session and certificate distribution.

About 50 Higher secondary school teachers from different schools of Kolkata and North& South 24 Parganas district of West Bengal participated in this programme. A good interactive session between participants and speakers was observed in the seminar. The seminar was a great success with the effort of faculties, staffs and students of our Institute. It was a unique

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discussion platform for school teachers and professional of the emerging and newer branches of Life Science.

△ The following B.Pharm. final year students have qualified, GPAT-2013. We congratulate them all.

Amanpreet Kaur, Mohua Das,

Sourav Bagchi, Uddipta Ghosh Dastidar,

Siddarth Shah, Prapti Chakraborty,

Subhradip Roychoudhury, Soumyajit Das,

Mounomukhar Bhattacharjee.

△ GNPST is now approved by AICTE and affiliated to WBUT for conducting the two years post graduate course (M.Pharm) in **PHARMACEUTICS**. The approved number of seat is 18.

## STUDENTS' SECTION

### ❖ WHO CAN ANSWER FIRST????

- ✓ *Which disease is also known as 'breakbone fever'?*
- ✓ *Which virus was first isolated Ren Kimura and Susumu Hotta?*

#### Answer of Previous Issue's Questions:

A) Apoptosis B) Necrosis

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- *Send your thoughts/ Quiz/Puzzles/games/write-ups or any other contributions for Students' Section & answers of this Section at [gnipstbulletin@gmail.com](mailto:gnipstbulletin@gmail.com)*

## EDITOR'S NOTE

I am proud to publish the 2<sup>nd</sup> issue of 28<sup>th</sup> Volume of **GNIPST BULLETIN**. GNIPST BULLETIN now connected globally through *facebook account 'GNIPST bulletin'*

I want to convey my thanks to all the GNIPST members and the readers for their valuable comments, encouragement and supports.

I am thankful to **Dr. Abhijit Sengupta**, Director of GNIPST for his valuable advice and encouragement. Special thanks to **Dr. Prerona Saha** and **Mr. Debabrata Ghosh Dastidar** for their kind co-operation and technical supports.

An important part of the improvement of the bulletin is the contribution of the readers. You are invited to send in your write ups, notes, critiques or any kind of contribution for the forthcoming special and regular issue.

## ARCHIVE

- The general body meeting of APTI, Bengal Branch has been conducted at GNIPST on 15<sup>th</sup> June, 2012. The program started with a nice presentation by Dr. Pulok Kr. Mukherjee, School of Natural Products, JU on the skill to write a good manuscript for publication in impact journals. It was followed by nearly two hour long discussion among

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more than thirty participants on different aspects of pharmacy education. Five nonmember participants applied for membership on that very day.

- GNIPST is now approved by AICTE and affiliated to WBUT for conducting the two years' post graduate course (M.Pharm) in **PHARMACOLOGY**. The approved number of seat is 18.
- The number of seats in B.Pharm. has been increased from 60 to 120.
- AICTE has sanctioned a release of grant under Research Promotion Scheme (RPS) during the financial year 2012-13 to GNIPST as per the details below:
  - a. *Beneficiary Institution:* Guru Nanak Institution of Pharmaceutical Science & Technology.
  - b. *Principal Investigator:* Dr. Lopamudra Dutta.
  - c. *Grant-in-aid sanctioned:* Rs. 16,25000/- only
  - d. *Approved duration:* 3 years
  - e. *Title of the project:* Screening and identification of potential medicinal plant of Purulia & Bankura districts of West Bengal with respect to diseases such as diabetes, rheumatism, Jaundice, hypertension and developing biotechnological tools for enhancing bioactive molecules in these plants.