Guru Nanak Institute of Pharmaceutical Science and Technology

GNIPST BULLETIN

LIFE-SCIENCE

VOLUME 4 ISSUE 4

Quote of the Month

"If we knew what it was we were doing, it would not be called research, would it?" ." - Albert Einstein

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IN REFLECTION AND VISION

The Director's Note

It is with great pride that we present Volume 4, Issue 4 of the GNIPST Bulletin, a vibrant reflection of our collective academic spirit and scientific inquiry. At Guru Nanak Institute of Pharmaceutical Science and Technology- Life Science, we remain committed to fostering a culture of excellence through a blend of rigorous academics, practical exposure, and innovative thinking. The life sciences are rapidly evolving, and our students and faculty continue to contribute meaningfully to this dynamic field.

This bulletin highlights achievements, new initiatives, and the creative energy that drives GNIPST forward. We extend our warmest regards to all readers and well-wishers. May this edition inspire continued learning, collaboration, and progress as we collectively strive toward growth, discovery, and success.

Dr. Abhijit Sengupta

The Principal's Note

Dr. Lopamudra Datta

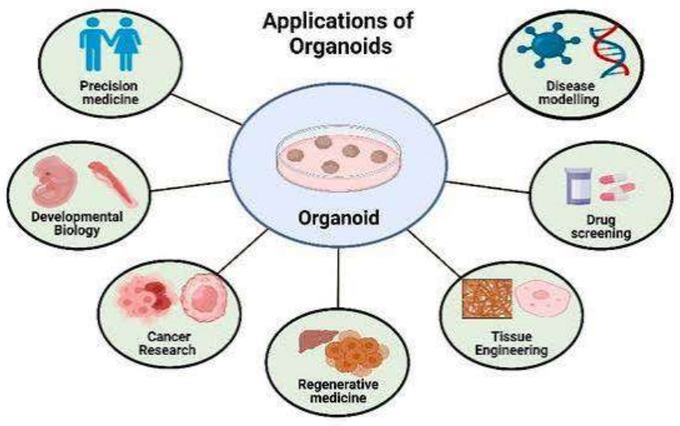
We are delighted to present Volume 4, Issue 4 of the GNIPST Bulletin – Life Science, showcasing the continued journey of our commitment to academic excellence, research, and innovation. As one of the leading institutions in West Bengal, GNIPST remains dedicated to providing advanced laboratory facilities, practical learning experiences, and industry-relevant internships, while nurturing our students with a strong foundation in scientific knowledge, ethical values, and critical thinking.

We extend our warm regards to all our readers, contributors, and well-wishers. Your continued support and enthusiasm encourage us to strive for excellence and to keep advancing in our mission of education, discovery, and service. We look forward to sharing many more stories of achievement, growth, and inspiration in the issues ahead.

INSIDE THE BULLETIN

SCIENCE UPDATE

Organoid Technology Revolutionizes Disease Modeling and Drug Testing

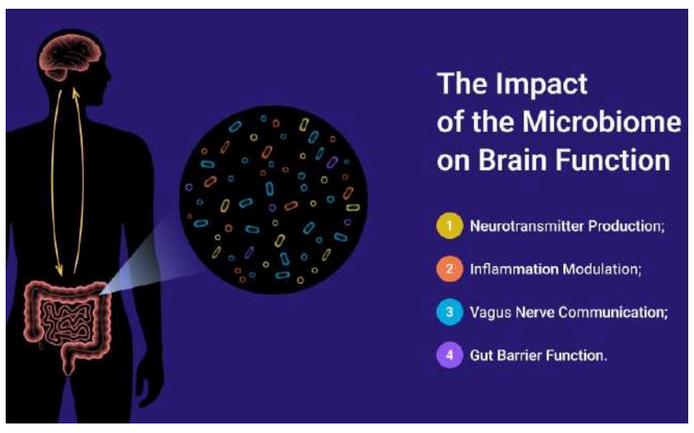


Three-dimensional organoids derived from human stem cells are transforming biomedical research by mimicking real organ structure and function. These mini-organs allow scientists to study disease progression, host-pathogen interactions, and drug responses in a controlled environment. Organoids of the intestine, liver, and brain are now widely used to model infections, cancer, and neurodegenerative diseases, reducing reliance on animal models and improving translational accuracy in drug development.

Click and **Read more**

Gut Microbiome Plays Critical Role in Mental Health Regulationans

Emerging research highlights the gut-brain axis, where microbial communities in the intestine influence neurological function and behavior. Changes in gut microbiota composition have been linked to anxiety, depression, and even neurodevelopmental disorders. Scientists are exploring probiotics, prebiotics, and fecal microbiota transplantation as potential therapeutic interventions to restore microbial balance and improve mental health outcomes..



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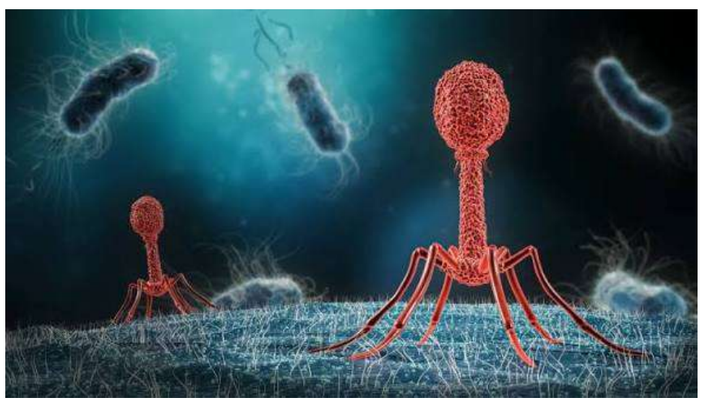
Phage Therapy Re-Emerges as a Weapon Against Antibiotic Resistance



With rising antimicrobial resistance, bacteriophages (viruses that infect bacteria) are gaining attention as targeted antibacterial agents. Unlike broad-spectrum antibiotics, phages selectively destroy pathogenic bacteria while preserving beneficial microbiota. Clinical studies are now evaluating phage therapy for multidrug-resistant infections, offering hope for treating conditions where conventional antibiotics fail.

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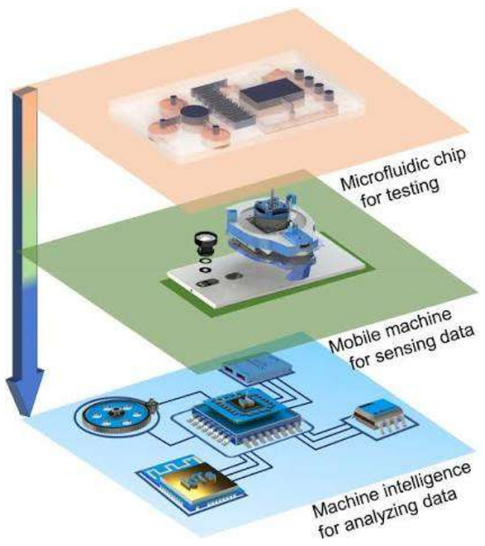
Microfluidic Lab-on-a-Chip Devices Transform Clinical Diagnostics

Microfluidic technologies are enabling the development of lab-on-a-chip systems that perform complex diagnostic tests using minimal sample volumes. These devices integrate multiple laboratory functions onto a single chip, allowing rapid and cost-effective analysis of blood, saliva, or urine. They are particularly useful in point-of-care testing, improving access to diagnostics in remote and resource-limited settings.



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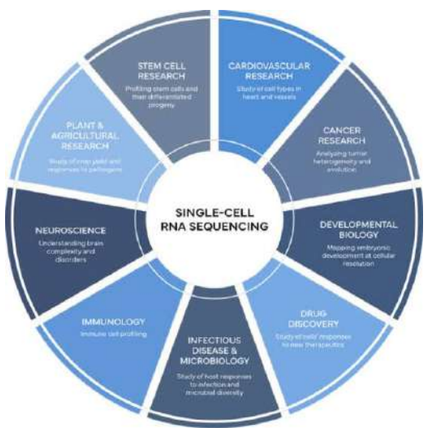
SCIENCE UPDATE

Single-Cell Sequencing Reveals Hidden Cellular Diversity

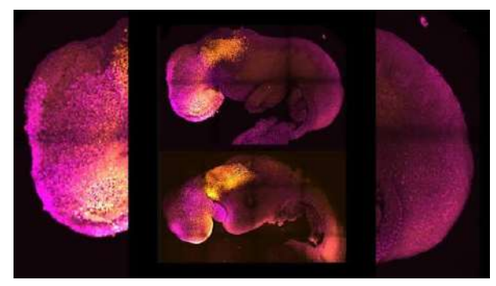


Advances in single-cell RNA sequencing are enabling scientists to study gene expression at the individual cell level, uncovering previously unknown cellular subtypes. This technology is revolutionizing our understanding of tissue heterogeneity, cancer progression, and immune responses, allowing for highly personalized therapeutic strategies based on cellular profiles.

Click and **Read more**

Synthetic Embryos Created Without Fertilization

Scientists have successfully developed embryo-like structures using stem cells without the need for sperm or egg fertilization. These synthetic embryos mimic early developmental stages, providing insights into embryogenesis, congenital disorders, and implantation failures, while also raising important ethical considerations in developmental biology research.extreme environments.



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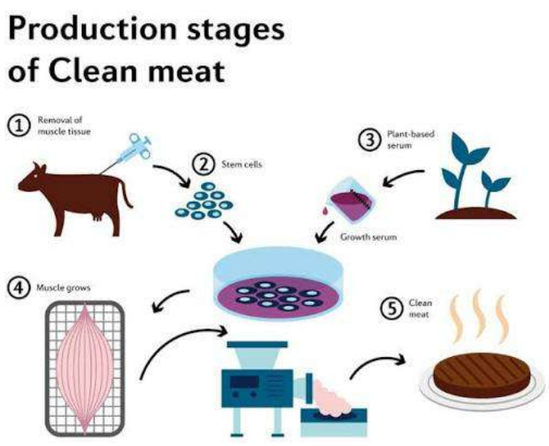
Lab-Grown Meat Production Advances Using Cell Culture



Biotechnology innovations are enabling the production of cultured meat from animal cells, reducing the need for livestock farming. This approach has implications for sustainability, food security, and ethical consumption, though scalability remains a challenge.pathogens, supporting sustainable agriculture.

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Advances in Hematology: Artificial Platelets Developed

In a significant advancement in transfusion medicine and trauma care, researchers have developed synthetic or bioengineered platelets that closely mimic the clotting function of natural human platelets. These artificial platelets are designed using biomimetic materials and engineered surface proteins that enable them to circulate in the bloodstream and rapidly adhere to sites of vascular injury. Once activated, they promote aggregation and facilitate the formation of stable blood clots, effectively reducing bleeding in conditions such as severe trauma, surgical hemorrhage, and thrombocytopenia (low platelet count)

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CAMPUS PULSE

Students of GNIPST successfully organised IRIS 2026 - Cultural Fest of GNIPST

01.04.2026-02.04.2025

The Opening Ceremony

Glimpses of the Events

IRIS Cup

WORLD HEALTH DAY

ACTIVITY CORNER

World Health Day : 7th April

World Health Day, observed every year on 7th April, is a global health awareness day dedicated to highlighting important public health issues and promoting well-being for people across the world. The day marks the anniversary of the founding of the World Health Organization in 1948, which works toward improving global health standards and responding to health emergencies. Each year, World Health Day focuses on a specific theme such as universal health coverage, mental health, or infectious diseases, aiming to draw attention to pressing health challenges and encourage collective action. It serves as a platform for governments, healthcare professionals, and communities to come together and advocate for accessible, affordable, and quality healthcare services for all. World Health Day not only raises awareness about critical health concerns but also emphasizes the importance of preventive care, healthy lifestyles, and strong healthcare systems in building a healthier and more equitable world.

Scrambled Words

HTLAEHCARE →

NTOIVPRENE →

LLAEWBNEIG →

NCTAAIVNCOI →

NTRITUNOUI →

NOISULCNI →

CLICK HERE

To Submit Your Answers!

ANSWER KEY (VOLUME 4 ISSUE 3)

NEMEPRWOTME → EMPOWERMENT
YLITAUQE → EQUALITY
MISFNIEM → FEMINISM
HSPERADLIE → LEADERSHIP
NOISULCNI → INCLUSION

SHOUT OUT TO THE WINNER OF ACTIVITY CORNER OF VOLUME 4 ISSUE 3

Debanjali Rudra, BBA(HM)

Guru Nanak Institute of Pharmaceutical Science and Technology

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"The best is yet to come. Here’s to a year of new beginnings and limitless possibilities!"

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