

## Biotechnology & Health:

Recent developments in biotechnology and health highlight the growing role of Artificial Intelligence (AI) and cutting-edge genomics in medicine, alongside new research discoveries and policy changes.

### Key Developments

**AI for Health and Wellness:** A new AI system, the Personal Health Large Language Model (PH-LLM), has been developed to provide personalized health and fitness advice. Trained on data from wearable devices like smartwatches, the system's recommendations on sleep and fitness have been shown to be nearly as effective as those from human experts. This technology aims to empower individuals with more data-driven insights into their health and could assist in managing chronic conditions.

**Gene Research in India:** The Indian government has released genome sequencing data from 10,000 Indians as part of the 'Genome India' project. This milestone aims to provide a robust dataset for researchers to develop precision medicines and gene-based therapies tailored to the Indian population. The initiative is a significant step towards understanding the genetic diversity within the country and advancing personalized medical management.

### Advancements in Drug Discovery and Development:

**"Evolution Engine" for Proteins:** Scientists at Scripps have created a new tool called T7-ORACLE, which can create and improve proteins thousands of times faster than natural evolution. This "evolution engine" is expected to

significantly accelerate the drug discovery process.

**NIH Research:** The National Institutes of Health (NIH) has announced that a study on human cells and mice has laid the foundation for a potential gene-editing therapy for late-onset Tay-Sachs disease, a rare genetic disorder.

**FDA Program:** The U.S. Food and Drug Administration (FDA) has launched the FDA PreCheck program to provide drug manufacturers with guidance on facility design, aiming to accelerate the onshoring of drug manufacturing to the U.S.

### New Medical Discoveries:

**Alzheimer's and Dementia:** A study has found that cats can naturally develop dementia with brain changes similar to human Alzheimer's disease, making them a potential natural model for research. Additionally, researchers have identified certain cancer drugs that may have the potential to reverse the effects of Alzheimer's in the brain.

**Obesity and Metabolism:** Scientists have identified a new brain-based approach that could lead to weight loss without the side effects often associated with current GLP-1 drugs. Another study found a direct link between faulty mitochondria and memory loss in neurodegenerative diseases, and a new tool to boost mitochondrial activity has been developed in mouse models.

### Corporate and Policy News:

Alligator Bioscience is hosting a virtual R&D Day to provide an update on its lead cancer drug candidate, mitazalimab, which has shown promising data in pancreatic cancer trials.



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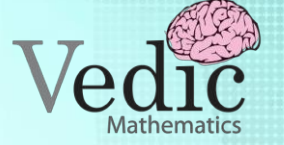
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The Government of Goa has announced a new pricing policy for innovative life-saving therapies to ensure they are affordable and accessible to its population.

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## MCQS

**Q1. What is the name of the new AI system that provides personalized health and fitness advice?**

- A. Health-AI Assistant
- B. Personal Health Large Language Model (PH-LLM)
- C. Wearable Health Tracker
- D. Fitness Data Analyzer

**Answer: B**

The news states that a new AI system called the "Personal Health Large Language Model (PH-LLM)" has been developed for providing personalized health and fitness advice.

**Q2. The 'Genome India' project has released genome sequencing data from how many Indians?**

- A. 1,000
- B. 5,000
- C. 10,000
- D. 50,000

**Answer: C**

The news report specifies that the 'Genome India' project has released "genome sequencing data from 10,000 Indians."

**Q3. What is the purpose of the new tool called T7-ORACLE, developed by scientists at Scripps?**

- A. To sequence human genes faster.
- B. To create and improve proteins thousands of times faster than natural evolution.
- C. To analyze a patient's medical history.
- D. To track the spread of infectious diseases.

**Answer: B**

The news explicitly states that T7-ORACLE is a new tool that can "create and improve proteins thousands of times faster than natural evolution," thereby accelerating drug discovery.

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**Q4. According to a new study, what animal can naturally develop dementia with brain changes similar to human Alzheimer's disease?**

- A. Dogs
- B. Cats
- C. Monkeys
- D. Mice

**Answer: B**

The news mentions that a study found that "cats can naturally develop dementia with brain changes similar to human Alzheimer's disease," making them a potential natural model for research.

**Q5. What is the name of the new program launched by the U.S. Food and Drug Administration (FDA) to provide guidance on facility design for drug manufacturers?**

- A. FDA Fast Track
- B. FDA PreCheck
- C. FDA Approval Plus
- D. FDA Onshore Initiative

**Answer: B**

The news states that the FDA has launched the "FDA PreCheck" program to "provide drug manufacturers with guidance on facility design" to accelerate the onshoring of drug manufacturing to the U.S.

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