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Biotechnology & Health:

Cancer Research and Novel Treatments

Scientists have developed a groundbreaking cancer treatment that uses bacteria as "Trojan horses" to deliver cancer-killing viruses directly into tumors. This method helps bypass the body's immune system, which would normally destroy the viruses, thereby allowing for a powerful, targeted two-pronged attack on cancer cells.

The BIO 2025 conference has highlighted the growing interest in psychedelics for clinical uses and the disruption caused by new weight loss drugs in the chronic disease market.

Gene Therapy and Protein Engineering

Researchers at Scripps have created a new tool called T7-ORACLE, which acts as an "evolution engine" to design and improve proteins thousands of times faster than natural evolution.

There's also a new theory about a "secret code" in our so-called "junk DNA," which suggests that ancient viral DNA buried in our genes may actively control how other genes are expressed.

Another breakthrough involves the flawless editing of entire chromosomes and a new technique to engineer phage therapies that can neutralize toxins in colorectal cancer models.

Indian Developments IN

The state of Odisha has inaugurated the Odisha Marine Biotechnology Research & Innovation Corridor (OMBRIC). This initiative aims to foster marine biotech startups and leverage

local resources to contribute to the "blue economy" through research in areas like gene discovery and bioactive molecules.

The Indian Council of Medical Research (ICMR) has opened a new call for research proposals and is inviting public comments on draft protocols for the performance evaluation of in-vitro diagnostics (IVDs).

India's first State-of-the-Art Animal Stem Cell Biobank and Laboratory has been inaugurated in Hyderabad, Telangana. This facility is part of the "One Health" approach, aiming to improve animal and human health by advancing regenerative medicine and cellular therapies for livestock.

Global Health Initiatives and Collaborations

South Korean biopharmaceutical company GC Biopharma has signed a Memorandum of Understanding (MOU) with the Thai Red Cross Society (TRCS) to enhance cooperation on the production of plasma-derived medicinal products. This collaboration will include training programs to transfer advanced manufacturing technologies.

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MCQS

1.What is the primary function of the "Trojan horse" method for a new cancer treatment?

- A) To deliver chemotherapy drugs to the brain.
- B) To use bacteria to carry cancer-killing viruses directly into tumors.
- C) To stimulate the body's immune system to attack cancer cells.
- D) To use a new type of radiation therapy.

Answer: B) To use bacteria to carry cancer-killing viruses directly into tumors.

The news states that the new cancer treatment "uses bacteria as 'Trojan horses' to deliver cancer-killing viruses directly into tumors,"

which helps the viruses bypass the body's immune defenses.

2.Which new research tool, developed by Scripps researchers, acts as an "evolution engine" to rapidly design and improve proteins?

- A) T7-ORACLE
- B) T-REX
- C) Gene-Xpress
- D) Bio-Force

Answer: A) T7-ORACLE

The text explicitly mentions that researchers at Scripps have created a new tool called "T7-ORACLE, which acts as an 'evolution engine' to design and improve proteins thousands of times faster than natural evolution."

3.Where has India's first State-of-the-Art Animal Stem Cell Biobank and Laboratory been inaugurated?

- A) Odisha
- B) Mumbai
- C) Hyderabad
- D) New Delhi

Answer: C) Hyderabad

The news states that "India's first State-of-the-Art Animal Stem Cell Biobank and Laboratory has been inaugurated in Hyderabad, Telangana."

4.What is the main goal of the collaboration between South Korean company GC Biopharma and the Thai Red Cross Society (TRCS)?

- A) To develop new vaccines for tropical diseases.
- B) To conduct joint research on gene therapies.
- C) To enhance cooperation on the production of plasma-derived medicinal products.
- D) To create new diagnostic tools for chronic diseases.





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Answer: C) To enhance cooperation on the production of plasma-derived medicinal products.

The news mentions that GC Biopharma has signed an MOU with the TRCS "to enhance cooperation on the production of plasma-derived medicinal products." This will also include training to transfer advanced manufacturing technologies.

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