Biotechnology & Health:

Domestic Biotechnology & Health

India has inaugurated its first Animal Stem Cell BioBank at the National Institute of Animal Biotechnology (NIAB) in Hyderabad. This state-of-the-art facility, funded by the Department of Biotechnology, aims to revolutionize veterinary science by focusing on regenerative medicine and cellular therapies for livestock. This is a significant step toward improving animal health and agricultural productivity in the country. The initiative also aligns with the 'One Health' approach, which recognizes the interconnectedness of human, animal, and environmental health.

In a related development, Union Minister Dr. Jitendra Singh unveiled five new veterinary technologies at NIAB, including a portable device for antimicrobial sensitivity testing and a rapid-strip detection kit for Japanese encephalitis in both animals and humans.

The Indian Council of Medical Research (ICMR) also launched the ICMR-SHINE initiative to engage students from grades 9-12 in biomedical research. This program offers hands-on exposure through lab tours and exhibitions to foster a scientific mindset among young people.

Global Biotechnology & Health

A new study published in the journal Cell Reports Medicine highlights an epigenetic breakthrough in diabetes care. Researchers have developed a blood test that can identify people with type 2 diabetes who are at a high risk of having a heart attack or stroke years in advance. This test, which costs around $200, uses epigenetic biomarkers and is more effective than traditional risk scores in predicting these cardiovascular events.

In other news, a quiet biotech revolution is emerging in Africa. Several nations, including Nigeria, Kenya, and Ghana, are developing their own regulatory frameworks for gene-edited crops. This policy shift treats tools like CRISPR differently from traditional genetically modified organisms (GMOs) and moves away from the strict regulations previously influenced by Europe. This is a strategic step towards achieving food sovereignty and technological independence.

Furthermore, a collaboration between CSIRO and Thai partner agencies is working to enhance Thailand's capacity for local vaccine and medicine manufacturing. The focus is on training and upskilling to support the domestic production of cancer biotherapeutics and HIV antiretrovirals, improving access to essential medicines in the region.

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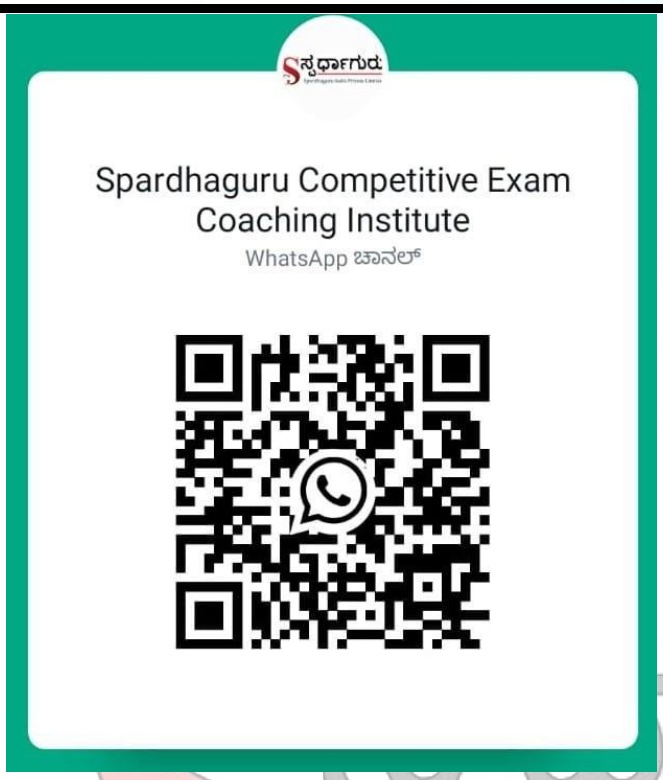

MCQS

1. Where was India's first Animal Stem Cell BioBank inaugurated?
A) New Delhi
B) Hyderabad
C) Bengaluru
D) Mumbai

Answer: B) Hyderabad
The news states that India's first Animal Stem Cell BioBank was inaugurated at the National Institute of Animal Biotechnology (NIAB) in Hyderabad.

2. What is the primary purpose of the new Animal Stem Cell BioBank in India?
A) To focus on gene-edited crops for agriculture.
B) To conduct research on human diseases.
C) To specialize in regenerative medicine and cellular therapies for livestock.
D) To create new types of vaccines for humans.

Answer: C) To specialize in regenerative medicine and cellular therapies for livestock.
The biobank is designed to revolutionize veterinary science by focusing on regenerative medicine and cellular therapies for livestock, ultimately improving animal health and agricultural productivity.

3. What is the goal of the ICMR-SHINE initiative?
A) To provide free medical care to students.
B) To engage students in biomedical research.
C) To fund new medical schools across the country.
D) To create a new vaccine for Japanese encephalitis.

Answer: B) To engage students in biomedical research.
The ICMR-SHINE initiative was launched to engage students from grades 9-12 in biomedical research through hands-on exposure, with the goal of fostering a scientific mindset.

4. What kind of breakthrough in diabetes care is highlighted in the news?
A) The discovery of a new insulin type.
B) A new surgical procedure for diabetes.
C) A blood test using epigenetic biomarkers to predict heart attack and stroke risk.
D) A new diet that can cure diabetes.

Answer: C) A blood test using epigenetic biomarkers to predict heart attack and stroke risk.
A new blood test has been developed that uses epigenetic biomarkers to identify individuals with type 2 diabetes who are at a high risk of cardiovascular events.

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5. What is the "biotech revolution" in Africa mainly about?
A) The widespread use of traditional GMOs.
B) Developing independent regulatory frameworks for gene-edited crops.
C) Adopting European regulations for biotechnology.
D) A new type of farming technique for drought-resistant crops.

Answer: B) Developing independent regulatory frameworks for gene-edited crops.
Several African nations are creating their own regulatory systems for gene-edited crops, moving away from European influence to achieve food sovereignty and technological independence.

6. What is the purpose of the collaboration between CSIRO and Thai agencies?
A) To develop new diagnostic tools for animal diseases.
B) To build a new biotech research facility in Australia.
C) To train Thai agencies in scaling up production of cancer biotherapeutics and HIV antiretrovirals.
D) To research new agricultural crops.

Answer: C) To train Thai agencies in scaling up production of cancer biotherapeutics and HIV antiretrovirals.
The collaboration aims to enhance Thailand's capacity for local vaccine and medicine manufacturing, specifically supporting the domestic production of cancer biotherapeutics and HIV antiretrovirals.

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