

Prelim Bits 13-08-2017

Xenotransplantation

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- It is the process of grafting or transplanting organs or tissues between members of different species.

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- Scientists have successfully edited the genetic code of piglets to remove dormant **viral infection** that could eventually pave way for animal to human organ transplants.

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- Gene editing can remove **Porcine Endogenous Retroviruses (PERVs)** from pig's DNA, potentially making it safe to grow human transplant organs in pigs.

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- Scientists have used the precision gene editing tool Crispr-Cas9 combined with gene repair technology to deactivate 100% of PERVs.

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- The existence of PERVs has been a major stumbling block preventing the development of genetically engineered pigs to provide kidneys and other organs for transplant into human patients.

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Gold Fish's Survival Technique

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- Goldfish can survive for months in oxygen free water at the bottom of ice covered ponds.

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- For most animals including humans, a lack of oxygen can be fatal. We can metabolise carbohydrates without oxygen, but the process generates toxic lactic acid that quickly builds up in our bodies.

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- But, the gold fish have their own specialized alcohol-production system,

evolved through adaptation of set of enzymes.

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- When oxygen levels drop, the enzymes ultimately help convert carbohydrates into alcohol that can then be released through the gills without building up of toxic lactic acid.

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Patagotitan

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- Patagotitan” which means a “giant from Patagonia,” is a new candidate to the title of world’s biggest dinosaur.

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- More than 150 Patagotitan fossils have been unearthed there over the past few years in Patagonia.

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- According to some scientists, Patagotitan (dinosaur) was the largest animal to ever walk on earth.

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- Patagotitan, which lived about 100 million years ago during the late Cretaceous Period, is considered a **titanosaur**.

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- It is a diverse lineage of plant-eating, long-necked dinosaurs with long tails that walked on four legs.

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Shaurya

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- Shaurya is an Indian Coast Guard ship, recently commissioned in Goa.

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- It is the fifth in the series of six 105-metre offshore patrol vessels (OPVs).

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- It features integrated bridge system, integrated machinery control system, power management system and high-power external fire fighting system.

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Quantum Satellite

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- China has recently sent an “unbreakable” code from a satellite to the Earth, marking the realization of first time space-to-ground quantum key distribution technology.

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- China launched the world’s first quantum satellite last year, to help establish “hack proof” communications.

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- Any attempt to eavesdrop on the quantum channel would introduce detectable disturbances to the system.

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- Once intercepted or measured, the quantum state of the key will change, and the information being intercepted will self-destruct. This makes them “Hack Proof”.

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Anti - dumping duty

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- Recently, 40 cases concerning imports from China have been initiated for anti dumping duty by Directorate General of Anti-Dumping and Allied Duties.

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- Dumping is a process where a company exports a product at a price lower than the price it normally charges on its own home market.

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- In order to protect local businesses and markets anti dumping duty is imposed.

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- Thus, anti-dumping duty is a protectionist tariff that a domestic government imposes on foreign imports that it believes are priced below fair market value.

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AIIB

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- India signs loan agreement with the Asian Infrastructure Investment Bank (AIIB) for financing of Gujarat Rural Roads Project.
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- AIIB is a new multilateral financial institution founded to bring countries together to address the daunting infrastructure needs across Asia.
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- The bank has 52 member states with its headquarters at Beijing, China.
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- United States and Japan are not its members.
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- It aims to stimulate growth and improve access to basic services by furthering interconnectivity and economic development in the region through advancements in infrastructure.
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- AIIB offer sovereign and non-sovereign finance for projects in energy and power, transportation and telecommunications, rural infrastructure and agriculture development, water supply and sanitation, environmental protection, urban development and logistics.
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- The loans will have an interest rate of London Interbank Offered Rate (LIBOR) plus 1.15 % and a repayment period of 25 years with 5 years in grace period.
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- It has authorized capital of US 100 billion dollars and subscribed capital of USD 50 billion.
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- China, India and Russia are the three largest shareholders of AIIB.
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