Research Highlights

Stomaching a virus!
The Genome Institute of Singapore (GIS) has discovered a potential new relationship between the Pepper Mild Mottle Virus (PMMV) and humans. GIS scientists discovered high concentrations of PMMV in the human gastrointestinal tract which suggests that a new viral transmission cycle may exist between humans and plants. Dr Ruan Yijun and his team used metagenomics, the application of modern genomics techniques to examine communities of microbial organisms directly in their natural environments, to study the viruses. They found that two thirds of their 18 samples from both Singapore and the U.S. tested positive for PMMV. The virus remained infectious to host plants even after passing through the human gastrointestinal tract.

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Safer disease treatments through IBN’s hydrogel

Scientists at the Institute of Bioengineering and Nanotechnology (IBN) have invented an injectable hydrogel that can deliver drugs at specific locations or act as a scaffold in bone and cartilage repair. This hydrogel, which comprises 2 types of solution – a fluid drug-loaded biodegradable polymer and an enzyme which acts as the gelation catalyst, is formed easily within the body through injections at the desired site. Unlike conventional hydrogels, surgery is not required to implant the hydrogel nor to remove it due to its biodegradability. The potential for medical applications is tremendous. In addition to cancer therapy and targeted drug delivery, the hydrogel can be used in bone and cartilage regeneration, and tissue engineering.

BMRC's fourth grant call funds more than 50 projects

In January 2006, the Biomedical Research Council (BMRC) announced that it will be supporting 50 research projects through its fourth grant call that resulted in a funding amount of $529.2 million. This supports both translational and basic research projects which will be carried out within Singapore's public institutions. The research projects were selected based on their scientific merit and potential impact. They range across a number of different areas, including cancers, Alzheimer's disease, dengue fever, tuberculosis, asthma and allergies. Already, positive results are being seen from the previous three BMRC grant calls which resulted in 477 publications and 35 patent filings to date.