

Just LED light to curb food poisoning?

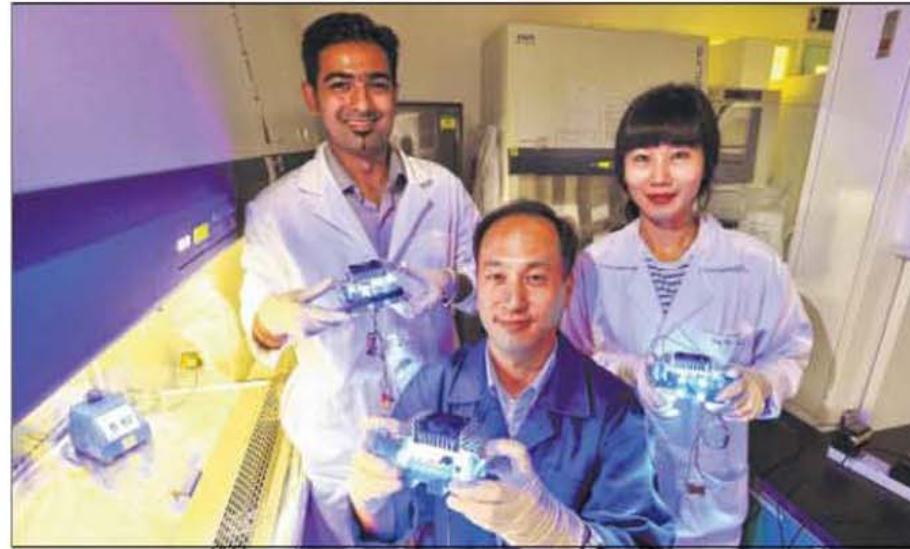
BY CAROLYN KHEW

SCIENTISTS here have seen the light – blue light emitting diodes (LEDs) in refrigerators could keep food poisoning at bay, they have found.

National University of Singapore (NUS) researchers discovered that the lights alone, known for being energy savers, are also major bug busters capable of killing bacteria which cause food poisoning, including the especially nasty *Salmonella Typhimurium* and *Escherichia coli* (*E. coli*).

The LEDs proved particularly effective in cold temperatures and mildly acidic conditions, so the scientists believe they could lead to a chemical-free way of storing fruit and other products.

Exposure to blue LED light starts off a process within the bacterial cells which causes them to die off as their light-sensitive compounds absorb the light, explained Yuk Hyun-Gyun of the Food Science and Technology Programme at the NUS Faculty of Science, who led the study.



LIGHTS OUT FOR BUGS: Dr Yuk, flanked by PhD students Vinayak Ghate and Kim Min Jeong, with LED light boxes. Dr Yuk says his study is the first to show that blue LEDs alone can eliminate bacteria. ST PHOTO: LIM YAOHUI

Unlike previous studies, Assistant Professor Yuk said that his is the first to show that blue LEDs alone can eliminate bacteria without the need for adding chemicals like photosensitisers – light-absorbing compounds which help to kill bacteria – or preservatives.

“This could meet the increasing demand for natural or mini-

mally processed foods without relying on chemicals,” he said.

During the latest study, his team tested suspensions of three types of bacteria, including pathogenic *E. coli* and *Salmonella*, under blue LEDs.

Food poisoning, which can kill, is caused by eating or drinking products contaminated with bacteria, viral or para-

sitic agents, and the contamination can occur when the food is being processed, stored or prepared.

It is a frequent cause of diarrhoea and vomiting in the community: In Singapore last month, for instance, several athletes were hit by suspected food poisoning during the SEA Games.

Ritu Bhalla, senior manager at Republic Polytechnic’s School of Applied Science said that while the study is promising, more work needs to be done to show the effectiveness of devices that could use blue LEDs for killing bacteria.

“We still need to validate whether the lights would be able to kill off all the bacteria in food products, owing to the diversity of bacterial strains and texture of food products,” she said.

“Storing food properly still remains one of the most important steps to prevent food poisoning. I hope people don’t neglect that.”

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