

# MEDIA RELEASE

NEWS FROM THE UNIVERSITY OF TASMANIA

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ATTENTION: Chiefs of Staff, News Directors

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## Keeping food safe

Providing food which is both safe from bacteria and free from copious preservatives has always been a challenge for the food industry, but University of Tasmania researchers have identified a new process to do just this.

Researchers at the School of Agricultural Science, led by Associate Professor Sergey Shabala, have investigated the conditions in which bacteria thrive and other organisms suffer.

They were then able to use this knowledge to kill the bacteria efficiently using minimal artificial processes.

The method was to target membrane transporters, which are small proteins carrying nutrients in and out of cells and either encourage or discourage growth. By targeting the right transporters, bacteria could not grow.

Assoc Prof Shabala said there had been a loose understanding that this procedure would work but now they had the scientific knowledge, it would be more efficient and reliable.

“The so-called ‘minimal hurdle technology’ has been in place for quite a few years, but the theory behind the process remained a mystery,” he said.

“This study has allowed us to move from empirical to scientifically-based methods, saving time and money on developing new screening procedures.”

As part of the study they developed a new test for food safety to meet strict Australian food standards.

Assoc Prof Shabala said previous methods had been time consuming and were often subjective.

“Now we have a very quick and rapid way of testing cells’ viability. We have a much better, more reliable approach and a much more sensitive one,” he said.

“This is particularly useful for bacteria, which is viable but not culturable.

“This means there is some bacteria on the food but it is in a dormant state, if it is left long enough it may grow again and is dangerous.

“The new method allows early detection of such “Trojan horses” potentially dangerous to our health.”

Assoc Prof Shabala said the project also provided some important insights into mechanisms of adaptation not only in bacteria but also other type of micro-organisms such as yeast or fungi.

As a result, the researchers from the University of Tasmania have been asked to participate in the next European Union project aimed to develop efficient pharmaceuticals to cope with some important human pathogens affecting our health.

**For more information please contact Assoc Prof Sergey Shabala on 6226 7539**

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