



Media Release

Attention: News Editors/Medical Writers

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Scientists discover toxin that causes gastro disease

Australian scientists have identified a highly potent toxin that causes severe gastrointestinal illnesses, including food poisoning.

The toxin, produced by certain strains of *E. coli* bacteria, has been found to be responsible for an outbreak of haemolytic uraemic syndrome, a dangerous disease that causes acute kidney failure, in South Australia in 1998.

The research team was led by Dr Adrienne Paton from the University of Adelaide, and included scientists from Monash University's ARC Centre of Excellence in Structural and Functional Microbial Genomics, and the United States.

Dr Travis Beddoe from Monash University's Department of Biochemistry and Molecular Biology, is one of the investigators who discovered that the bacterial toxin, subtilase cytotoxin, deactivates an essential component of cells in the gastrointestinal tract.

"It is unique because it cuts an essential component of the cell machinery in half, therefore disabling it," he said.

As well as learning how the toxin works, the scientists have also determined its three-dimensional structure, which will aid in the development of treatments for toxin-related diseases.

"This toxin belongs to the family of toxins that cause whooping cough, a very serious bacterial infection that affects children," Dr Beddoe said.

He said the research breakthrough may also provide insights into the development of age-related and degenerative diseases such as Parkinson's disease and Alzheimer's disease, and may be used in the treatment of some cancers.

The collaborative research was supported by the National Health and Medical Research Council and the Australian Research Council. The research findings are published in the latest issue of the journal *Nature*.

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