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**Protein could be used to treat alcohol effects on pancreas**

A Cardiff University-led study has discovered that a protein provides protection against the effects of alcohol in the pancreas.

The findings of the study, funded by the Medical Research Council, could lead to the development of new treatments to reduce the chances of people developing pancreatic cancer.

The protein, calmodulin, is involved in the basic processes that take place in all cells, the building blocks of the body.

This study reveals that when calmodulin is missing from cells in the pancreas, alcohol has a much greater toxic effect as a chain reaction which causes cells to self destruct speeds up.

This can lead to inflammation (pancreatitis), which in the long-term significantly increases the risk of developing pancreatic cancer.

Pancreatic cancer is the fifth most common cause of death through cancer, and only three per cent of patients survive beyond five years.

The study team, led by Professor Ole Petersen in the MRC Group at Cardiff University’s School of Biosciences, found that calmodulin protects pancreatic cells against alcohol’s toxic effects when it is activated by another small protein, CALP-3.

Professor Petersen said: "There is still much uncertainty about how alcohol damages cells in the body. However, we have found a new and unexpected way that pancreatic cells protect themselves.

We suggest that activation of the calmodulin protein protects against the development of pancreatitis.

There is a strong correlation between alcohol intake and incidence of pancreatitis, and we hope that our new findings will eventually lead to the development of drugs to combat this.

This is a key step forward."

Professor John Iredale, Head of the University of Edinburgh/MRC Centre for Inflammation Research, remarked: "This is a really important finding. Acute pancreatitis, which is currently untreatable, remains an important cause of death.

It is important also to recognise that this disabling disease may result from binge drinking.

The MRC is committed to understanding inflammation – especially in examples with serious implications like this.

We focus on driving the translation of discoveries from basic science into benefits for human health."

The study is reported in the journal Proceedings of the National Academy of Sciences and was carried out in collaboration with researchers from the University of Liverpool, the RIKEN Brain Science Institute in Japan and the Japanese Science and Technology Agency.

**Notes to editors**

**Medical Research Council**For almost 100 years the Medical Research Council has improved the health of people in the UK and around the world by supporting the highest quality science. The MRC invests in world-class scientists. It has produced 29 Nobel Prize winners and sustains a flourishing environment for internationally recognised research. The MRC focuses on making an impact and provides the financial muscle and scientific expertise behind medical breakthroughs, including one of the first antibiotics penicillin, the structure of DNA and the lethal link between smoking and cancer. Today MRC funded scientists tackle research into the major health challenges of the 21st century. [www.mrc.ac.uk](http://www.mrc.ac.uk/)

**Cardiff University**Cardiff University is recognised in independent government assessments as one of Britain’s leading teaching and research universities and is a member of the Russell Group of the UK’s most research intensive universities. Among its academic staff are two Nobel Laureates, including the winner of the 2007 Nobel Prize for Medicine, University President Professor Sir Martin Evans.   
Founded by Royal Charter in 1883, today the University combines impressive modern facilities and a dynamic approach to teaching and research. The University’s breadth of expertise in research and research-led teaching encompasses: the humanities; the natural, physical, health, life and social sciences; engineering and technology; preparation for a wide range of professions; and a longstanding commitment to lifelong learning. Three major new Research Institutes, offering radical new approaches to neurosciences and mental health, cancer stem cells and sustainable places were announced by the University in 2010.

**University of Liverpool**The University of Liverpool is a member of the Russell Group of leading research-intensive institutions in the UK. It attracts collaborative and contract research commissions from a wide range of national and international organisations valued at more than £110 million annually.

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Notes to Editors

The paper, ‘Calmodulin protects against alcohol-induced pancreatic trypsinogen activation elicited via Ca2+ release through IP3 receptors’ will be published by Proceedings of the National Academy of Sciences on Monday 21 March 2011.