

New insights into cell death

March 18 2011



Dr. Richard Clarkson

A Cardiff team has contributed to a study of a novel model of cell death which helps to explain how cells in the breast die through an archaic mechanism that is relevant to breast cancer.

Dr Richard Clarkson's research group was part of a consortia of international research laboratories led by a Cambridge University research group that has revealed a novel mechanism of cell death which occurs in a normal mammalian organism.

Billions of damaged or superfluous [cells](#) die in our bodies every day. It is thought that most cell death occurs by a process called apoptosis, in which biochemical events lead to cell changes and death. However, the Cambridge-led team has shown that cells in the breast die following lactation by a process that involves lysosomes. These are organelles which digest and recycle cellular components. This is the first time that this type of cell death has been shown to occur in a healthy mammal. The research team provides evidence that this process is regulated by

proteins found at high levels in breast cancer.

Dr. Clarkson's contribution was to provide a key piece of evidence that proved that the cells could not be dying by apoptosis, as was originally thought.

Dr. Clarkson, of the School of Biosciences, explained: "We used some state-of-the-art transgenics techniques to inhibit the ability of the cells within the mammary glands to undergo apoptosis and thus proving that these cells die by another route"

Dr. Clarkson said that Professor Watson's team at the Department of Pathology in Cambridge, who led the study, had made a significant contribution to our understanding of how cells make the decision to die for the benefit of the whole organism.

The research, published in *Nature Cell Biology*, was funded by studentships from the University of Cambridge Department of Pathology, the Breast Cancer Campaign, and the Medical Research Council as well as the Biotechnology and Biological Sciences Research Council, who directly contributed to the generation of the models used in Dr. Clarkson's work.

Dr. Clarkson added "The next steps for our cell death model is to establish whether [breast cancer](#) is kept under control by apoptosis, or whether archaic [cell death](#) mechanisms also play a dominant role in the pathogenesis of the disease"

Provided by Cardiff University

Citation: New insights into cell death (2011, March 18) retrieved 5 May 2024 from <https://phys.org/news/2011-03-insights-cell-death.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.