

Kent cancer expert helps discover new ‘chemotherapy booster’ that could treat lung and pancreatic cancer

A new drug that blocks cancer’s escape route from chemotherapy could be used to treat deadly lung and pancreatic cancers, new research reports.

Scientists, including the University of Kent’s Professor Michelle Garrett, have shown in human cancer cells and in mice that the drug boosts the effectiveness of conventional chemotherapy.

The drug, discovered at the Institute of Cancer Research, London (ICR) and known as CCT245737, is scheduled to begin first-in-human clinical trials in patients with lung and pancreatic cancers – two cancers with low survival rates that continue to resist currently available treatments.

The new study is published in the journal *Oncotarget*, and was funded by Cancer Research UK and Sareum Limited.

Professor Garrett was part of the team that conducted research at the ICR in collaboration with colleagues at the drug discovery company Sareum and Newcastle University to show the effectiveness of a new class of drugs called CHK1 inhibitors that can be delivered orally to patients.

Most chemotherapies work by damaging the DNA of rapidly dividing cells. But in response, cancer cells activate a molecule called CHK1 which delays cell division and gives cancer cells time to repair their damaged DNA.

Scientists hoped that blocking CHK1 could stop cancer cells from repairing DNA damage and prevent them from becoming resistant to the cell-killing effects of chemotherapy.

Researchers developed techniques to assess the method of action of CCT245737 in human cancer cell lines, and demonstrated that it potently blocked the molecule CHK1.

They also assessed CCT245737 in combination with chemotherapy in mice with tumours grown from human cancer cell lines, and found it achieved much greater anti-cancer activity than chemotherapy alone. Importantly, the mice did not experience any additional toxicity of the combined drugs.

Researchers also found that the CHK1 inhibitor could be used alone, without additional chemotherapy, to treat a type of blood cancer called lymphoma because this cancer type sustains heavy DNA damage during its formation.

Professor Garrett joined the University of Kent’s School of Biosciences in 2014 where she is Professor of Cancer Therapeutics.

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News releases can also be found at <http://www.kent.ac.uk/news>

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Notes to editors

1.

The intellectual property associated with the project was licensed to the CRT Pioneer Fund (CPF) who are now working with Sareum, to take the project into Phase I clinical trial before commercialisation.

2

The Institute of Cancer Research, London, is one of the world's most influential cancer research institutes. Scientists and clinicians at The Institute of Cancer Research (ICR) are working every day to make a real impact on cancer patients' lives. Through its unique partnership with The Royal Marsden NHS Foundation Trust and 'bench-to-bedside' approach, the ICR is able to create and deliver results in a way that other institutions cannot. Together the two organisations are rated in the top four cancer centres globally.

The ICR has an outstanding record of achievement dating back more than 100 years. It provided the first convincing evidence that DNA damage is the basic cause

The ICR's mission is to make the discoveries that defeat cancer. For more information visit <http://www.icr.ac.uk>

3.

Established in 1965, the University of Kent – the UK's European university – now has almost 20,000 students across campuses or study centres at Canterbury, Medway, Tonbridge, Brussels, Paris, Athens and Rome.

It has been ranked: third for overall student satisfaction in the 2014 National Student Survey; 16th in the Guardian University Guide 2016; 28th in the Sunday Times University League Table 2013; and 22nd in the Complete University Guide 2015.

Kent is ranked 17th in the UK for research intensity (REF 2014). It has world-leading research in all subjects and 97% of its research is deemed by the REF to be of international quality.

Along with the universities of East Anglia and Essex, Kent is a member of the Eastern Arc Research Consortium (www.kent.ac.uk/about/partnerships/eastern-arc.html).

The University is worth £0.7 billion to the economy of the south east and supports more than 7,800 jobs in the region. Student off-campus spend contributes £293.3m and 2,532 full-time-equivalent jobs to those totals.

In 2014, Kent received its second Queen's Anniversary Prize for Higher and Further Education.