

Bowel cancer breakthrough may benefit thousands of patients

July 18 2014

Researchers at Queen's University have made a significant breakthrough that may benefit patients with bowel cancer.

Dr Sandra van Schaeybroeck and her team have discovered how two genes cause [bowel cancer](#) cells to become resistant to treatments used against the disease. The research, which was funded by Cancer Research UK, was published this month in the prestigious international journal *Cell Reports*.

The activity of the two genes, called MEK and MET, was uncovered when the researchers looked at all the different pathways and interactions taking place in bowel cancer cells.

Dr van Schaeybroeck and her group found that these bowel cancers switch on a survival mechanism when they are treated with drugs that target faulty MEK genes. But when the researchers added drugs that also block the MET gene, the bowel [cancer cells](#) died.

The team are now testing a new approach to target these two genes in the most aggressive forms of bowel cancer in a European Commission funded clinical trial that is being led by Dr van Schaeybroeck.

Currently over 40,000 people are diagnosed with bowel cancer in the UK each year and over 16,000 patients die of the disease. More than half of patients develop the aggressive form of the disease which does not respond to standard therapy, the five year overall survival in this patient

group is less than five per cent.

Study author Dr Sandra van Schaeybroeck, from the Centre for Cancer Research and Cell Biology (CCRCB) at Queen's University, said: "We have discovered how two key genes contribute to aggressive bowel cancer. Understanding how they are involved in development of the disease has also primed the development of a potential new treatment approach for this disease."

Queen's University Vice-Chancellor, Professor Patrick Johnston, said: "Understanding the [genes](#) that cause bowel cancer is a key focus of our research. Our discoveries in this deadly disease have identified a new route to clinical application for cancer patients."

Professor David Waugh, Director of the CCRCB at Queen's, said: "The publication of this research by Dr van Schaeybroeck and her team demonstrates our commitment to performing excellent science here in Belfast that can be directly translated to the clinic."

The clinical trial, which is called MErCuRIC and is due to start in September, will deliver personalised medicine to Northern Irish patients and [patients](#) from other European countries. Overall, the pan European collaborative effort will involving 13 research/clinical teams from nine European countries.

More information: "ADAM17-Dependent c-MET-STAT3 Signaling Mediates Resistance to MEK Inhibitors in KRAS Mutant Colorectal Cancer." Sandra Van Schaeybroeck, Murugan Kalimutho, Philip D. Dunne, Robbie Carson, Wendy Allen, Puthen V. Jithesh, Keara L. Redmond, Takehiko Sasazuki, and others. *Cell Reports*, Vol. 7, Issue 6, p1940–1955. Published online: June 12, 2014

Provided by Queen's University Belfast

Citation: Bowel cancer breakthrough may benefit thousands of patients (2014, July 18) retrieved 26 April 2024 from

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