



# A method for prognosis and treatment of colorectal cancer

## Overview

Colorectal cancer is a highly prevalent form of cancer. Globally, colorectal cancer is the third most common type of cancer making up about 10% of all cases.

EU statistics show a higher age-related increase in colorectal cancers than other cancers. Given the demographic of western society colorectal cancers are set to increase as the population ages, places a greater health burden on society.

Researchers at the University of Limerick have developed a biomarker test that can be used to determine colorectal cancer survival rates. Potential biomarker uses include:

- Tailoring of treatment plans based on prognostic outcomes
- Drug target for colorectal cancer
- Method for testing efficacy of current and future drugs.

## Technology

The method consists of measuring the PKC enzyme Beta II in both cancerous and non-cancerous patient colonic tissue. The magnitude of difference between PKC Beta II in normal versus cancerous tissue indicates the likelihood of the patient surviving disease-free for a ten year period (see Figure 1).

This could be of interest to companies developing drugs to target colorectal cancer who wish to use a long-term prognostic marker, or who wish to target the expression or activity of this enzyme to treat colorectal cancer. It could also assist in stratifying at-risk patients and indicate appropriate treatment outcomes for this cohort.

*In vitro* testing strongly supports the patient data, whereby enhanced expression of the PKC isozyme Beta II reverses the phenotype of cancerous colorectal cells.

For further information see Dowling *et al.*, (2016), Protein kinase C beta II suppresses colorectal cancer by regulating IGF-1 mediated cell survival. *Oncotarget* (15), vol. 7.

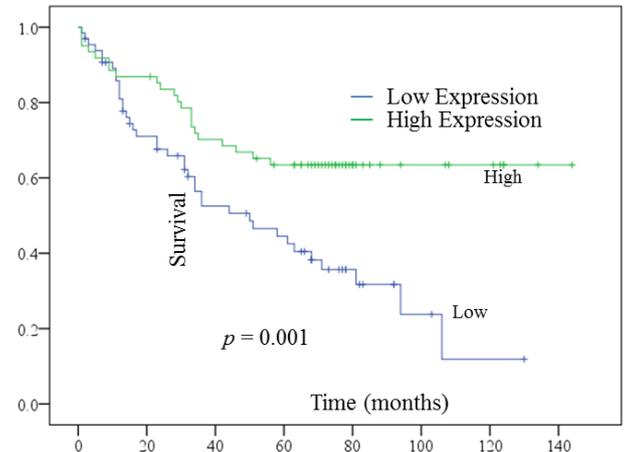


Figure 1. PKC expression in epithelium tissue. Low levels of PKC are strongly associated with a reduction in disease-free survival time ( $P < 0.001$ ).

## Commercial Opportunity

The University of Limerick is interested in seeking partners to exploit the commercial potential of this technology by entering into licensing agreements, using the technologies as the basis of a Spin-Out company and/or innovation partnerships that mutually benefit both parties.

## IP Status

Patent application EP 13195177.4 has been filed with the European Patent Office.

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