

NovaUCD

Technology Transfer Opportunity

Proteomic Profiling of p21-Mediated Anti-apoptotic and Mitogenic Paracrine Effects

OPPORTUNITY:

Proteomic profiling of p21-mediated anti-apoptotic and mitogenic paracrine effects identified candidate proteins to act as:

- A prognostic/diagnostic tool during cancer treatment
- Potential targets to enhance the efficacy of current cancer therapies.

Technical Description:

p21 is widely known to play a key role in senescent systems. The variety of treatments and insults that can result in "Stress-Induced Premature Senescence" or SIPS suggests that senescent cells can arise more frequently than previously believed. Furthermore, senescent cells have been observed to be abundant in some compartments and tissues that have been exposed to considerable damage, such as surrounding tissue of irradiated tumours.

Using a combination of different techniques as detailed in reference (see IP status) proteomic profiling was used to identify secreted proteins regulated by p21 that may contribute to an anti-apoptotic and mitogenic paracrine effect.

Value Proposition:

Identifying p21-regulated factors that contribute to the phenomenon of senescence results in commercial opportunities in:

- Diagnostics/prognosis: allows monitoring of treatment regimes that result in senescence and therefore allows early intervention to optimize therapy
- Treatment: down regulation of the candidate proteins offers an attractive adjunct therapy to ensure effective treatment and prevent re-occurrence
- Screen: the candidate proteins can act as a screen to identify modulators of p21 effects.

The Funding Opportunity Announcement published supports the submission of applications that "advance research to identify and quantitate changes in the secretory pattern of senescent cells, as well as the effect such changes might have in their immediate microenvironment." (http://grants.nih.gov/grants/guide/pa-files/PA-07-278.html). This opportunity is supported by the National Cancer Institute and National Institute on Aging under the National Institute of Health umbrella and demonstrates the importance of solutions to senescence in cancer treatment.

Market:

This opportunity is currently being validated in both the esophageal and rectal diagnostic cancer markets but has the potential to address further market segments in the breast, lung, prostate and skin cancer markets, among others.

Inventors:

Professor William Gallagher, Dr Darren O'Connor and Dr Caroline Currid, UCD School of Biomedical and Biomolecular Science with Dr Igor Roninson, Molecular Oncology, Ordway Institute, New York.

Status:

PCT/US07/68619. WO2007134142 (Publication date; 22.11.2007) For further information see; "Proteomic analysis of factors released from p21-overexpressing tumour cells" Proteomics, 6, 3739-3753.

Opportunity Sought:

- Collaboration with an industrial partner to further develop applications for use as a diagnostic or prognostic testing kit
- Licensing opportunity.

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