



4 May, 2016

HLS5 Tumour Suppressor Gene – Pre Clinical Model Developed

Molecular Discovery Systems Ltd (“**MDS**”) is working with the Molecular Cancer Research Group at the Harry Perkins Institute of Medical Research to validate HLS5 as a novel tumour suppressor gene, particularly for liver cancer.

The Molecular Cancer Research Group has developed a pre-clinical model of liver cancer where the expression of Hls5 is ablated ie it mimics, in part, patients that have low HLS5 (TRIM35) and develop liver cancer.

Characterising the molecular function of HLS5 (TRIM35)

The researchers at the Perkins Institute originally identified HLS5 (TRIM35) as a tumour suppressor associated with leukemia. However, in a separate study conducted in China, low levels of HLS5 (TRIM35) was found to correlate with human liver cancer development, and that reduced HLS5 (TRIM35) expression could potentially be used as prognostic marker for the disease.

In a significant further phase of this research the Perkins Institute researchers have developed a pre-clinical model of liver cancer and have demonstrated, in this model, that removing the expression of HLS5 (TRIM35) can accelerate the development of liver disease.

The focus of this work is to:

1. Understand how reduced expression of HLS5 (TRIM35) influences biochemical and molecular pathways resulting in the development of liver cancer.
2. Develop molecules that can increase HLS5 (TRIM35) expression to overcome this deficit in liver cancer patients. Importantly, lead compounds from a chemical library screen have been identified, which increase the activity of the HLS5 (TRIM35) gene.

Research undertaken by the Perkins Institute team, and laboratories in China, has revealed that HLS5 (TRIM35) is capable of slowing the growth of tumour cells in culture, including suppression of liver cancer cells.

Liver cancer ranks as the second leading cause of cancer-related deaths in developing countries. An estimated 782,500 new cases of liver cancer and 745,500 deaths occurred worldwide in 2012, of which China alone accounted for almost 50%

of cases. While survival rates for many cancers have improved over the past two decades, there has been no major improvement in liver cancer prognosis.

Liver cancer also looms as one of Australia's greatest cancer challenges, with new analyses predicting increased mortality from the disease in the future. At present, limited treatment options exist for patients with liver cancer.

It is anticipated that the work currently being undertaken by the Perkins Institute researchers will be prepared for publication. The development of this pre-clinical model may enable MDS to pursue research and partnering relationships with a significant new range of collaborators and investors.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'D. Breeze'.

David Breeze
Chairman

Molecular Discovery Systems Ltd

ACN 118 494 492

PO Box 317, North Perth, Western Australia 6906

14 View Street, North Perth, Western Australia 6006

admin@mdsystems.com.au www.mdsystems.com.au

T: +61 8 9328 8644 F: +61 8 9328 8733