



25 July 2011

Companies Announcement Office
Australian Securities Exchange Limited
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Key HLS5 Cancer Role Report
extensive patient testing highlights HLS5 role in cancer

BPH Energy Limited investee company Molecular Discovery Systems (**MDS**) is pleased to confirm the publication of a peer reviewed scientific paper supporting the role of the cancer tumour suppressor gene, HLS5 (also known as TRIM35). **The study conducted by independent researchers in China found that reduced HLS5 levels were shown to correlate with worse tumour grade, increased tumour size and elevated serum AFP levels, a marker of liver cancer.** The paper indicated that the loss of HLS5 expression is a critical event in liver cancer.

The research paper, a collaborative effort between Fudan University, Shanghai Cancer Institute, Shanghai Jiao Tong University and Qi Dong Liver Cancer Institute, has been accepted for publication in the prestigious international journal Hepatology, and is titled 'Genome-Wide Copy Number Analyses Identified Novel Cancer Genes in Hepatocellular Carcinoma'. The research paper can be accessed at:

<http://onlinelibrary.wiley.com/doi/10.1002/hep.24495/abstract>

This article defines key genes involved in liver cancer by identifying genes that are frequently altered in liver cancer. The paper identified 362 genes that were differentially expressed in liver cancers. Further investigations reduced the 362 genes down to 20 genes of interest, of which HLS5 was one. The study used a sizeable cohort of 207 paired liver cancer samples.

By over-expressing HLS5 in two liver tumour cell lines, SMMC-7721 and Huh-7, the Chinese scientists determined that **HLS5 was capable of significantly inhibiting the growth of liver cancer cells *in vitro* (within Petri dish) and tumour growth *in vivo* (animal studies).** Furthermore, when the HLS5 gene was deliberately switched off by the researchers there was a significant increase in proliferation of liver cancer cells.

Arguably the most significant finding was that out of a sizeable cohort, 207 paired liver tumour samples, HLS5 was negatively correlated with tumour size, tumour grade and AFP levels. The Authors suggest that the loss of HLS5 expression is a critical event in the development and progression of liver cancer.

MDS has exclusive rights to the tumour suppressor gene HLS5, both as a potential therapeutic target and also underpinning its involvement in a variety of diseases. In recognition of its potential in detecting and treating cancer; HLS5 has attracted research funding from the NHMRC, Cancer Council of WA, the national Breast Cancer Foundation, the Medical Research Foundation of Royal Perth

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Hospital and the Scott Kirkbride Melanoma Research Centre. MDS is working with Professor Peter Klinken and his group in the Western Australian Institute for Medical Research (WAIMR).

David Breeze, Chairman of BPH Energy, said, "The extensive overseas testing of the HLS5 gene by an independent research team has strongly correlated levels of HLS5 with liver cancer.

The results indicate that the loss of HLS5 expression is a critical event in the development and progression of this cancer. This new study greatly supports the research by MDS and WAIMR on this tumour suppressor gene."

Yours sincerely,

A handwritten signature in black ink that reads "D. Breeze".

David Breeze
Chairman

For Further Information

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Background:

MDS:

MDS is working with WAIMR to characterise and exploit the therapeutic potential of HLS5, for which it has exclusive rights that are protected by an extensive patent portfolio. The HLS5 patent 'Tumour Suppressor Factor' has been issued in Australia and the United States. BPH Energy has a 20% residual interest in MDS after the spin-off of MDS in 2010. BPH Energy is working towards a listing of MDS on the Australian Securities Exchange.

WAIMR:

WAIMR is Western Australia's premier adult medical research institute and since its inception, WAIMR has made a number of internationally-significant research discoveries, including the identification of genes linked to asthma, leukaemia, breast, ovarian and prostate cancer, as well as those related to a number of nerve, muscle and mental health disorders.