



Olivia Newton-John Cancer Research Institute Evaluates Monepantel Anti-Cancer Mechanism

- Olivia Newton-John Cancer Research Institute (ONJCRI) screening for gene expression supports monepantel's (MPL's) safety profile on non-cancer cells
- ONJCRI further reveals pathways regulating how MPL selectively causes cancer cells to stop growing and to self-destruct
- Gene candidates identified for further investigations

29 September 2020 – Perth, Australia: PharmAust Limited (ASX:PAA), a clinical-stage oncology company, is pleased to provide an update on analysis at the Olivia Newton-John Cancer Research Institute (ONJCRI) investigating the mechanism of action of monepantel (MPL) upon cancer cells.

Researchers in the Cell Death and Survival Laboratory at the ONJCRI conducted an RNA sequencing screen comprehensively investigating how the entire genome of cancer cells respond when treated with MPL. In particular, this approach identifies which genes are switched-on and which genes are switched-off by MPL. One non-cancer cell line was used as control and the three cancer cell lines were melanoma, lung cancer and ovarian cancer.

The ONJCRI researchers found that changes in gene expression in the non-cancer cell genome were relatively modest when compared to the changes in the three cancer cell lines. This observation supports previous studies indicating that MPL does not affect non-cancer cells and has selectivity towards cancer cells. Particularly, the ONJCRI demonstrated that cancer cell genes involved in promoting cell division were suppressed, while those involved in inducing cell death (apoptosis) or autophagy were induced.

These observations are consistent with other data showing that MPL acts to stop cancer cells from dividing and to self-destruct. A number of genes identified from this screen will now be investigated further to establish the mechanism of action of MPL and to enable differentiation of MPL's effects on cancer cells compared to other anti-cancer drugs.

The work by the ONJCRI is supported in part by a \$50,000 Innovation Connections grant from the Commonwealth Department of Industry, Innovation and Science.

PharmAust's Chief Scientific Officer Dr Richard Mollard said, "It is terrific to have independent confirmation of MPL's specificity to cancer cells as well as a comprehensive dissection of the genetic pathways associated with MPL's anti-cancer action. This systematic work will facilitate PharmAust's applications for human clinical trials with regulatory agencies such as the TGA in Australia, the FDA in the US and the EMA in Europe, particularly as it demonstrates the selective nature of how MPL may operate physiologically."

This announcement is authorised by the Board

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About PharmAust (PAA):

PAA is a clinical-stage company developing therapeutics for both humans and animals. The company specialises in repurposing marketed drugs lowering the risks and costs of development. These efforts are supported by PAA's subsidiary, Epichem, a highly successful contract medicinal chemistry company which generated ~Aus\$3.02m in revenues in the 2018 FY.

About the Olivia Newton-John Cancer Research Institute:

The Olivia Newton-John Cancer Research Institute is a leader in the development of experimental and breakthrough cancer treatments. We investigate and develop treatments for cancers of the breast, bowel, lung, melanoma, prostate, liver, gastrointestinal tract and brain. Our researchers and clinicians are involved in more than 200 clinical trials, giving patients access to potential new treatments including immunotherapies and personalised medicine.

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