

Children's Cancer Institute

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Bright Blue Charity for Sick Children Funding Update – September 2018

With the generous support of the Bright Blue Charity for Sick Children, Associate Professor Tao Liu of Children's Cancer Institute has recently made an exciting breakthrough in the childhood cancer, neuroblastoma.

In recent years, researchers around the world have been noticing that what was previously considered to be “junk” DNAs are actually extremely important in producing what are called “non-coding” DNAs and RNAs that do not create proteins – they seemingly don't ‘do’ anything. What was once thought to be useless DNAs and RNAs in fact play vital roles in the fine tuning and control of processes inside the cell involving MYCN and TERT, two genes known to cause cancer.

Associate Professor Liu has made exciting discoveries in further understanding the roles these DNAs and RNAs play. He has tested neuroblastoma patient samples from the Sydney Children's Hospital in Randwick and the Children's Oncology Group USA and has found that there are very high levels (too much in fact!) of these “non-coding” DNAs and RNAs in samples of patients who had the most aggressive sub-types of neuroblastoma.

This has lead Associate Professor Liu to the next exciting step of finding a way to block the functions of the DNAs and RNAs in cells with drug-like compounds – because if he can do that, less of the MYCN and TERT oncogenes will be present and there will be less cancer.

This work is critically important to improving the lives and survival rates of children suffering from neuroblastoma. Associate Professor Liu and all of the staff at Children's Cancer Institute are extremely grateful for the funding received from the Bright Blue Charity for Sick Children – he could not have made this breakthrough without it!