



Understanding why some childhood blood cancers are incurable

Project title: Understanding molecular mechanisms that drive high-risk childhood acute lymphoblastic leukaemia

Lead researcher: Professor Anindita Roy, University of Oxford

Project Stage: Starting soon (August 2023)

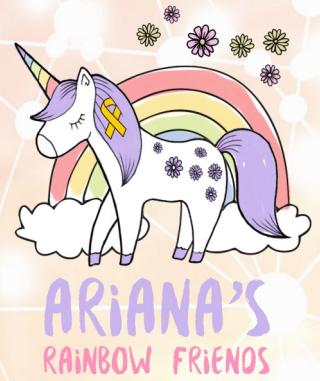
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ABOUT THE PROJECT

Although we can now cure nine out of 10 children with leukaemia, there are still some children who can't be treated successfully. These children have 'high-risk' types of leukaemia that are usually caused by errors in specific genes. These patients often don't respond to treatment and their cancer can return after treatment. We urgently need a better understanding of these treatment resistant subtypes, so that we can cure every child with leukaemia.

Professor Anindita Roy and her team at the University of Oxford have developed a way to create models which behave like cancer, by giving leukaemia genes to normal cells. They will use these models to understand how high-risk leukaemias develop, the pathways that drive this aggressive disease and to test new drugs for treatment. Previous research by their lab has shown that, leukaemia cells can need certain genes to be mistakenly turned on or off in order to survive.

In this project, Professor Anindita Roy will use leukaemia cells from these models, and from patients, to understand how these leukaemia survival genes cause the cancer cells to develop and resist treatment. To do this, her team will analyse how different types of healthy cells change when given leukaemia genes, and see whether preventing these changes can make the leukaemia less aggressive. The results of these experiments will show suggest new targets for treatment - especially if the researchers can find a preventable change that is only found in treatment-resistant leukaemia cells.



JOSH'S GOLD STAR FUND



RUBY'S FUND

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