

Studying the origins of childhood acute myeloid leukaemia to identify targets for kinder and more effective treatments

Project title: Identifying more efficient therapeutic targets for paediatric AML using CITE-seq

Lead researcher: Dr Juliana Fabiani Miranda, University of York

Project Stage: Starting soon (June 2024)

Funded by: Funded by CCLG and CCLG Special Named Funds including #teamkai and A Goal for Sam

ABOUT THE PROJECT

Acute myeloid leukaemia (AML) is an aggressive type of blood cancer and is the second most common type of childhood leukaemia. There are not many treatment options, and sometimes the cancer cells escape chemotherapy. This leads to the cancer coming back in over half of patients. Whilst there are new treatments that have been developed, these are mainly for adults with AML and may not work the same for children. Currently, survival can be slightly improved by making giving more chemotherapy – but this increases side effects and long-term health issues due to damage to healthy cells.

This shows the need for targeted therapies that are more harmful to cancer cells than healthy cells. To develop these new treatments, we need to find ways to selectively target cancer cells. However, we do not know enough about the most "druggable" targets in cancer – the proteins that do most of the work within a cancer cell.

In this project, Dr Juliana Fabiani Miranda from the University of York will develop detailed information about all of the proteins and genetic molecules found in childhood AML cells. This will set the foundations for future research by providing data about these cancer cells, particularly those that escape chemotherapy. Dr Fabiani Miranda hopes that her work could lead to improved survival rates through new treatments for chemotherapy resistant AML cells.

This project was funded by Special Named Funds at Children's Cancer and Leukaemia Group raising funds for research into childhood acute myeloid leukaemia.