

Project Summary

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alloPRECISE (allogeneic stem cell transplantation PRECISION

Oncology using SysTEms Immunology)

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Allogeneic stem cell transplantation remains the only curative treatment option for most acute myeloid leukemia (AML) patients. Yet, the donor-derived immune system frequently fails to maintain long-lasting control over the malignancy resulting in relapse with poor prognosis. To date, post relapse treatment strategies are insufficiently addressing the individual mechanisms of immune escape. This project aims to comprehensively investigate the complex interactions between immune and leukemia cells that drive relapse and how they are modulated by drug treatments leveraging advanced single cell and spatial technologies. By combining these technologies with sophisticated bioinformatic approaches, we seek to identify reliable biomarkers of AML relapse and subsequent treatment response. This effort is directed towards developing personalized treatment strategies for patients experiencing relapse, ultimately aiming to improve outcomes following allogeneic stem cell transplantation.