

ETM/374 - Identifying Novel Targets For Eradication Of Acute Lymphoblastic Leukaemia In The Central Nervous System

Relapse of acute lymphoblastic leukaemia (ALL) remains a major cause of childhood death. Relapse involving the central nervous system (CNS) is common and yet little is known about the biology of ALL cells in the CNS. In this project we investigate the differences between CNS and bone marrow (BM) niches that may be exploitable therapeutically. Using an in vivo xenograft model and primary patient samples we will compare transcriptional and metabolic adaptations to the CNS and BM microenvironments. In addition, we will use cerebrospinal fluid metabolic profiling to investigate possible biomarkers for CNS infiltration. We will go on to perform integrative analysis of transcriptomic and metabolomic datasets in order to identify key hubs which play critical non-redundant roles in cellular survival in the CNS. Together these studies will lead to identification of novel therapeutic targets for CNS disease with the potential to increase cure rates and reduce treatment-related toxicity.