New cancer therapies must first be tested outside the body in cell-based (in-vitro) models of disease. Most existing in-vitro models are poorly predictive of how cancer behaves in the body, as they fail to consider the contribution of other, non-tumour cells in the Tumour Microenvironment (TME). This leads to high failure rates in clinical trials.

While most immunotherapies deliver engineered immune cells against specific cancer types, N-LIfT is unique in exploiting innate immune cells from ‘super donors’ to fight all cancer types in a tumour-agnostic manner, paving the way for off-the-shelf cancer treatment. The Knowledge Transfer Partnership (KTP) with Queen Mary will help LIfT Bio test future generations of immunotherapies, accelerating their path to market. This project is a new addition to Queen Mary’s KTP portfolio.

LifT Bio wishes to test its new class of neutrophil-based immunotherapy (N-LIfT) in complex and highly sophisticated in vitro models created at Queen Mary, to further study N-LIfT’s cancer killing mechanisms and accelerate the path to clinical trials. To more accurately study the complex mechanisms behind cancer invasion, progression, and response to treatment, researchers require models that replicate the tumour microenvironment. The Knowledge Transfer Partnership (KTP) Associate employed on the project will use 3D multi-cellular culture systems established in Dr Ombrato’s lab to test N-LIfT cell therapies. The Associate will also take advantage of the expertise available to model more complex tumour microenvironments, including suppressive elements. These models more closely replicate the actual tumour microenvironment in vivo, and will allow to test N-LIfT in a highly complex system. This will increase the likelihood that the outcome observed in vitro will translate into patients.