



Company: LIFT Biosciences Limited

Knowledge Transfer Partnership: To significantly improve the accuracy of a novel immunotherapy to accelerate cancer therapy development and speed up delivery to patients.

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.

Challenge

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 is a young and dynamic biotech, and we share with them a lot of common research interests. Working with LIFT is an amazing opportunity to show that the research we do and the technologies we develop in the lab have translational potential and could be exploited to generate findings that will make a difference in treating cancer patients."



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