

Seminar

Engineering a platform for T cell-inspired extracellular vesicles in targeted immunotherapy for pancreatic ductal adenocarcinoma

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T-cell lymphocytes play a pivotal role in orchestrating immune responses and, like all cells, they produce and release nanoscale extracellular vesicles (EVs). These EVs are essential components involved in a wide spectrum of pathological and physiological processes, facilitating cellular communication by shuttling diverse cargoes, including non-coding RNAs, mRNAs, DNA, lipids, glycans and proteins between cells. Variations in EV composition are evident among distinct T-cell subtypes, reflecting their diverse roles in immunoregulation.

This work is dedicated to the comprehensive characterisation of EVs released into the immunological synapse - a nano-scale gap between T cells and antigen presenting cells (APCs). The focal point of this study lies in the precise isolation protocols employed to procure these EVs, as well as an in-depth exploration of their compositional intricacies. Additionally, we delve into the functional dimensions of these EVs, with a specific emphasis on their influence on APCs. This endeavour unveils the dynamic interplay between T-cell-derived EVs and APCs, offering insights into the intricate communication mechanisms governing immunoregulatory processes.

The findings presented in this study yield profound insights into the intricate domain of intercellular communication within the immune system. These insights not only significantly enhance our comprehension of immune responses but also hold substantial promise for the development of potential therapeutic strategies, with a particular focus on addressing the context of pancreatic ductal adenocarcinoma within the realm of immunotherapy.

Thursday, Oct 5th 2023

11:30 AM (Tea / Coffee 11.15 AM)

Auditorium, TIFR-H