

From sensing to silence - dsRNA pathways and their role in immune evasion

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Abstract

Cancer remains a major global health challenge, with one of the primary obstacles to effective treatment being the ability of tumors to evade immune detection and destruction. Although significant advances have been made in understanding the mechanisms underlying immune escape, strategies to effectively counteract this process are still limited. Recent research has highlighted the pivotal role of double-stranded RNA (dsRNA) molecules in modulating tumor immunity, positioning dsRNA as a novel and critical factor in cancer immune evasion. Elucidating which dsRNA species are involved, and how they are recognized and modified to facilitate immune escape, holds promise for the development of innovative therapies aimed at overcoming immunotherapy resistance and unresponsiveness. In this talk, I will present our latest findings, focusing on the complex interplay between RNA alterations and immune regulation, and their profound impact on immunosuppression in cancer.

Biography

Dr. Polly Leilei Chen earned her Bachelor of Medicine and completed medical training in China before receiving her PhD from the University of Hong Kong in 2010. In 2014, she joined the National University of Singapore as a Principal Investigator at the Cancer Science Institute of Singapore and served as Assistant Professor in the Department of Anatomy. She was promoted to Associate Professor in 2021 and is currently the Deputy Director of CSI. Her research focuses on the functional and mechanistic roles of RNA changes, particularly RNA editing, modification, and splicing, in cancer initiation and progression, and on developing novel cancer therapies that target these RNA alterations.