



Regulatory networks of NK cells and anti-tumour immunity

Presented by

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Abstract

Immunotherapy with checkpoint blockade induces rapid and durable immune control of cancer in some patients and has driven a monumental shift in cancer treatment. Neoantigen-specific CD8⁺ T cells are at the forefront of current immunotherapy strategies, and the majority of drug discovery and clinical trials revolve around further harnessing these immune effectors. Yet the immune system contains a diverse range of antitumour effector cells, and these must function in a coordinated and synergistic manner to overcome the immune-evasion mechanisms used by tumours and achieve complete control with tumour eradication. A key antitumour effector is the natural killer (NK) cells, cytotoxic innate lymphocytes present at high frequency in the circulatory system and identified by their exquisite ability to spontaneously detect and lyse transformed or stressed cells. Emerging data show a role for intratumoural NK cells in driving immunotherapy response and, accordingly, there have been renewed efforts to further elucidate and target the pathways controlling NK cell antitumour function. Here, I we discuss recent clinical evidence that NK cells are a key immune constituent in the protective antitumour immune response and highlight the major stages of the cancer–NK cell immunity cycle presenting new opportunities to target NK cell function to enhance cancer immunotherapy response rates across a more diverse range of cancers.

Biography

Professor Huntington is the head of the Cancer Immunotherapy Laboratory at the Biomedicine Discovery Institute at Monash University. He is an international leader on natural killer (NK) cell biology with 120 publications contributing to our understanding of the regulatory mechanisms of IL-15 signalling in NK cells and identification of multiple checkpoint in NK cell activation and tumour immunity. Prof. Huntington leads a research program aimed at deciphering the regulatory networks that control NK cell immunity and a drug discovery program using cutting-edge *in vivo* screens for novel checkpoints in NK cell activation for targeting in cancer immunotherapy. Prof. Huntington is a co-founder and chief scientific officer of oNko-Innate Pty Ltd.

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