Immuno-Oncology

Abstract

Today, it is accepted that the ability to evade the attention of the immune system is an essential hallmark of cancer. Critically, as tumours progress, cancer cells can protect themselves from the immune system's natural ability to fight the disease. This observation has led to an explosion of basic research to discover how to restore anti-tumour immunity for advancing cancer treatment. Clinical successes have been achieved following the approval of checkpoint inhibitor therapy to effectively prolong the life of many cancer patients with malignant disease.

However, despite impressive survival gains, there is still a high variability of responses between different types of cancer and many patients still fail to respond. The disappointing findings that have been documented over the many clinical trials performed so far coincide with a much more complex view of immuno-oncology that has emerged from technological advances in functional fluorescent imaging techniques, high throughput RNA sequencing and single-cell mass cytometry.

The themed topic ‘Immuno-Oncology’ captures the contemporary understanding that individual tumours comprise remarkable mixtures of immune cell populations that actively contribute to neoplastic growth, invasion and metastasis through reciprocal and dynamic interactions with cancer cells. In the context of this new knowledge, the reviews discuss novel ideas of therapeutic opportunities for cancer. We would like to thank the authors for their excellent contributions.

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