

## 癌症免疫療法之新進展

### Recent advances in cancer immunotherapy

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Cancer cells employ several mechanisms to evade the immune system of their host, thus escaping immune recognition and elimination. Of particular interest is a cancer cell's ability to co-opt the immune system's innate ligands and inhibitory receptors (also known as checkpoints), thus creating an immunosuppressive microenvironment that downregulates T-cell activation and cell signaling. Although induction of anti-tumor immune responses through cancer vaccine is theoretically promising and would be straightforward. In contrast, immune checkpoint blockade with anti-CTLA4 mAb and anti-PD-1 mAb has demonstrated clear evidence of objective responses including improved overall survival and tumor shrinkage, driving renewed enthusiasm for cancer immunotherapy in multiple cancer types. In addition, there is a promising novel cancer immunotherapy,

The recent development of the checkpoint inhibitors anti-CTLA4, anti-PD-1 and anti-PDL-1 has generated an enormous amount of interest as a potential new anticancer strategy in solid tumors, particularly in non-small-cell lung cancer, renal cell carcinoma and melanoma. Data suggest significant disease response rates using anti-PD-1 and anti-PDL-1 antibodies, even in heavily pretreated patients. Future directions include optimization of drug delivery sequence and combination of immunotherapy with other therapies including cytotoxic chemotherapy, radiation, antiangiogenic agents and small-molecule tyrosine kinase inhibitors.