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SYMPOSIUM IN WRITING

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Tumor and dendritic cells as cellular vaccines: confrontation and perspectives – a symposium in writing

Preface

The efficient isolation and preparation of both human and murine dendritic cells (DC) are now possible and applications for these cells in cancer immunotherapy are envisioned.

DC seem especially promising in this respect, since they can be loaded with an array of peptides or DNA representing known and unknown tumor-associated antigens.

This written symposium presents different scenarios in which DC drive the priming of the host immune response to tumors, either by cross-priming or by direct priming after ex vivo antigen loading. Cross-priming implies that tumor cells used as cell vaccines, including those engineered to produce cytokines and to express co-stimulatory signals, when injected in vivo, are disrupted and represented by host DC. Whether cross-priming occurs at the tumor site or within draining lymph nodes is also considered. DC loaded ex vivo are expected to migrate to the closest lymph node, initiating T cell activation. Methods for DC loading have been extensively studied and are reviewed here. However, the repertoire of tumor antigens associated with a particular neoplasm, as predetermined by immunoselection, will dictate the choice of vaccine type. Moreover, identification of the relevant antigen(s) is necessary for a precise immunological follow-up of treated patients.

Vaccination would thus be available for management of post-surgery tumor patients, patients with minimal residual disease, or patients expected to show tumor recurrence after an apparently disease-free interval. When compare with conventional forms of therapy, vaccination is a non-invasive treatment free from particular distress and sideffects.

On the other hand, vaccine development has not yet reached a point where replacement of other treatment (e.g., interferon α in melanoma) for these disease stages is ethically allowed.

Efforts are required to increase the efficacy of vaccination in more advanced stages of disease, thus providing proof of some clinical benefits rather than simply increasing patients cytotoxic T lymphocyte activity or other measurable in vitro immune responses.

Because this Symposium focuses on a few direct questions related to tumor immunotherapy, scientists involved in aspects of application rather than DC immunobiologists were invited to participate.

Whatever their background, all readers of *Cancer Immunology and Immunotherapy* should find something of interest in the papers of this Symposium.

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