Journal of Immunology Research

Special Issue on

Immunotherapy in the Treatment of Human Solid Tumors: Basic and Translational Aspects

CALL FOR PAPERS

In the last two decades important advancements in the treatment of hematological malignancies have led to significant increases in patients' survival. In sharp contrast, few substantial therapeutic progresses have been made in the treatment of solid tumors, which remain the most frequent cancers in industrialized countries. Currently, available therapies to control solid tumor growth include surgery, when applicable, radiotherapy, chemotherapy, and targeting of molecular pathways used by cancer cells and/or tumor-associated vasculature. In a relevant number of cases combination therapies induce a rapid but however short-lasting tumor regression. Time has come to improve knowledge of the mechanisms allowing tumor survival in the host and discovering novel strategies that, by supporting currently used therapeutic protocols, warrant long-term remission or possibly cure the disease. Therapies based on nanotechnology delivery platforms, like liposomes containing antitumor compounds, can improve selective toxicity against cancer cells while reducing, if not minimizing side effects. Due to the peculiar permeability of tumor vasculature, liposomes preferentially accumulate into tumor interstitial spaces. Moreover, compounds concentration increase several-fold by conjugating liposomes with molecules such as antibodies or fragments thereof that selectively target tumor-associated ligands.

A more durable tumor control can be obtained with interventions aimed at strengthening or restoring the antitumor immunity. Responses have been documented in patients with solid tumors who received therapies that interfere with the CTLA-4/B7s and/or PD1/PD-Ls axes, critical checkpoints that regulate the duration and amplitude of T CD8+ and NK effector functions. Results can be achieved also when the adverse tumor microenvironment is converted into a milieu favorable for the recruitment, survival, and function of immune effectors. Efforts are currently ongoing to overcome the immunosuppression mediated by immunoregulatory cytokines, including TGF-β macrophages, myeloid-derived suppressor cells and treg. Additional interventions focus on the chemokine/chemokine receptor repertoire, usually hijacked in tumor tissues, to promote the migration of suitable immune effectors, either endogenous or infused in adoptive immunotherapies. Finally, combining adoptive immunotherapy modalities, like NK cells and T cells engineered with chimeric antigen receptors (CAR), may result in synergistic therapeutic opportunities.

We invite investigators to contribute with original papers as well as reviews describing recent findings in the field of basic and translational immunology against solid tumors.

Potential topics include, but are not limited to:

- Innovative immune-mediated therapies: liposomes-based strategies to deliver anticancer compounds to novel tumor- and tumor vasculature-associated antigens
- NK cells and T cells engineered with chimeric antigen receptors (CAR)
- Novel immunomodulatory pathways enhancing the responses of T cells and innate effectors
- Mechanisms and strategies to overcome the immunosuppression (cell-to-cell contacts and soluble factors) mediated by tumor cells, tumor associated leucocytes, and stromal cells
- Chemokines and chemokine receptors that influence the migratory capabilities of endogenous or infused immune effectors

Authors can submit their manuscripts via the Manuscript Tracking System at http://mts.hindawi.com/submit/journals/jir/sold/.

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Manuscript Due
Friday, 2 October 2015

First Round of Reviews
Friday, 25 December 2015

Publication Date
Friday, 19 February 2016