2002 Forbeck Focus Meeting: A New Tool in Cancer Medicine: Exploiting the Patient’s Immunological Memory

Organizers:
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Layout:
Sessions:
I. Memory T lymphocytes, dendritic cells, chemokines and T cell trafficking
II. Lymphocyte recirculation and homing in lymphoid and peripheral tissues
III. Systemic role of homeostatic chemokines in adaptive immunity
IV. TCR-Repertoire-analysis of tumor-reactive T cells in cancer patients
V. Autologous B-lymphocyte responses to solid tumors; Serex-method
VI. Tumor-associated antigens of solid tumors; autologous T cell immunity
VII. T cell monitoring in infectious and malignant diseases
VIII. Adoptive T cell therapies
IX. Clinical application and monitoring of specific cellular immunotherapies

Focus: We wish to introduce a new field of cancer immunology to an interdisciplinary group of outstanding experts, both basic scientists and clinicians. The meeting will focus on the interdisciplinary exchange of expertise to accelerate scientific progress and to draw up future clinical applications. In the past, a number of tumor-associated antigens (TAAs) have been characterized to be capable of initiating autologous and allogeneic T-lymphocyte responses against the respective tumors. Thus, TAA-reactive T cells may be potent agents for cancer treatment. Clinical usage of such cells is nevertheless hampered by their low frequency and often anergic status in the peripheral blood of patients. It is the aim of various approaches, such as dendritic cell vaccination, to increase the frequency of the patients TAA specific effector cells. In contrast, we recently demonstrated that a majority of breast cancer patients are very well able to generate high frequencies of tumor-reactive T cells. These cells are not found in the peripheral blood, but stored as resting memory T cells in the bone marrow. Isolated and re-activated in vitro, these cells exert potent antitumor functions in vitro and in vivo. Thus, the bone marrow may be suitable as a therapeutic source of enriched TAA-specific lymphocytes for an autologous immunotherapy. Other points of discussion will cover: the possible implication of B-cell immunity on cancer treatment, bone marrow as an exploitable compartment for B cell memory, the redistribution of applied cells within the lymphoid compartments and target tissues of the host, the use of dendritic cells for T and B lymphocyte re-activation, immunological monitoring during immunotherapies and generation of clinically applicable immune cells under good manufacturing practice conditions.

Outcome Report: The meeting intended to introduce a new field of cancer immunology to an interdisciplinary group of outstanding experts, both basic scientists and clinicians who cover all major aspects of the topic from basic immunology to problems related to the clinical application of new
immunotherapeutic approaches. The meeting was focused on the interdisciplinary exchange of expertise in order to accelerate scientific progress and to draw up future clinical applications. In the past, a number of tumor-associated-antigens (TAAs) have been characterized to be capable of initiating autologous and allogeneic T-lymphocyte responses against the respective tumors. Thus, TAA-reactive T cells may be potent agents for cancer treatment. It has been recently demonstrated that cancer patients are able to generate high frequencies of tumor-reactive T cells. Isolated and re-activated in vitro, these cells exert potent anti-tumor functions in vitro and in vivo.

Thus, clinical application of memory lymphocytes may become potent a potent tool in cancer treatment. Throughout the workshop, issues such as differentiation, homeostasis and functional characteristics, migration, homing to tumors and lymphoid tissues and redistribution of such memory T cells, as well as their interactions with B cells and dendritic cells were discussed lively and controversy. The underlying expert presentations provided the basis for these discussions and the consecutive lectures on issues related with clinical applications of such cells. The meeting enlarged profoundly the experts’ knowledge and understanding of the subject and led to a variety of scientific and clinical co-operations.