OMICS Group Conferences
Accelerating Scientific Discovery

International Conference and Exhibition on
Surgery, Anesthesia & Trichology

November 26-28, 2012 Hilton San Antonio Airport, USA

IL-10 blockade increases the therapeutic efficacy of effector B cells in cancer adoptive immunotherapy by modulating host cellular and humoral antitumor immunity

Qiao Li, Huimin Tao, Qin Pan, Fang Zheng, Martin Egenti and Alfred E. Chang
Department of Surgery, University of Michigan, USA

The role played by B cells in the host immune response to cancer is complex and controversial.We have reported the antitumor reactivity of adoptively transferred effector B cells in several tumor models. To understand the mechanisms by which B cells mediate tumor regression, we used the spontaneous metastasis 4T1 breast cancer model and IL-$10^{-/-}$syngeneic Balb/c mice to generate IL-$10^{-/-}$ tumor-draining lymph nodes (TDLN). Adoptively transferred IL-$10^{-/-}$ TDLN B cells mediatedsignificantly more effective antitumor immunity than equal numbers of WT TDLN B cells ($p<0.05$). Activated IL-$10^{-/-}$ effector 4T1 TDLN B cells were capable of killing4T1 tumor cellsdirectly in a tumor antigen specific manner in *in vitro* cytotoxicity assays independent of antibody and complement. Adoptive transfer of IL-$10^{-/-}$ TDLN B cells resulted in the induction ofhost cellular and humoral antitumor immunity significantly morethan adoptive transfer of WT TDLN B cells ($p<0.05$).Thiswas evident by significantly shiftedcytokine production (e.g. up-regulated IFN-gamma and IL-2 production by host T cells, but down-regulated IL-10 production by host B cells). In addition, adoptively transferred IL-$10^{-/-}$ TDLN B cells increasedtheproduction oftumor-reactive IgG which bound to 4T1 tumor cells. Furthermore, IL-$10^{-/-}$ TDLN B cell infusion significantly increased tumor cell lysis (CTL) activitymediated by host Bcells as well asT cells in an immunologically specific fashion. Ourresults indicate that depletion of IL-10-producing B cell subsets may represent an effective strategy to augment the therapeutic efficacy of TDLN B cells used in adoptive immunotherapy.

Biography

Qiao Li, Ph.D., a Research Assistant Professor in the Department of Surgery at the University of Michigan has had his research focused on tumor immunology and cancer immunotherapy. His work both in preclinical studies and in clinical trials has involved the treatment of different tumors, including patients with advanced melanoma and renal cancers. These treatment approaches utilize various immune strategies, such as T cells, B cells, and dendritic cells as well as targeting of cancer stem cells.

qiaoli@med.umich.edu