자유연제 1-2

Dendritic Cells Pulsed with Apoptotic Squamous Cell Carcinoma have Anti-Tumor Effects When Combined with Interleukin-2

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Objectives : Dendritic cells (DC), the most potent of the antigen-presenting cells, have been widely studied as a promising tool for anti-tumor immunotherapies. However, little has been determined about the efficacy of DC-based therapy for the treatment of squamous cell carcinoma (SCC), due to the fact that there are no known SCC-specific antigens. Recent reports indicate that DC can acquire antigens in the form of apoptotic cells and induce cytotoxic T lymphocyte responses. The aim of this study was to test the feasibility of adoptive DC immunotherapy against SCC by using apoptotic tumor cells as a source of tumor antigens.

Methods : A poorly immunogenic SCC line KLN 205 was used to make subcutaneous tumors on the flank of DBA2/J syngeneic mice. Bone marrow derived DC were pulsed with ultraviolet B-irradiated (apoptotic) KLN 205 cells in vitro, and transferred to the opposite flank subcutaneously. Some of the animals received simultaneous injections of low-dose interleukin-2 (IL-2) intraperitoneally.

Results : When combined with IL-2, adoptive transfers of DC that pulsed with apoptotic SCC significantly suppressed the tumor growth ($p<0.001$) without notable side effects. Splenic T cells of treated mice produced greater amounts of interferon-gamma when re-stimulated with the relevant tumor ($p<0.001$) as compared to control groups, indicative of an effective T cell-mediated systemic immune response.

Conclusion : Adoptive DC immunotherapy, which pulsed with apoptotic tumor cells as a source of tumor antigens can elicit effective anti-tumor responses in the poorly immunogenic SCC model when combined with IL-2.