Enhancement of dendritic cells with melanoma-associated antigen 3 for inducing cytotoxicity by cytotoxic T lymphocytes on bladder cancer BIU-87 cells

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ABSTRACT. To determine the cytotoxic effect of lymphocytes activated by melanoma-associated antigen 3 (MAGE-3)-sensitized dendritic cells (DCs) on BIU-87 tumor cells, and to evaluate the
possibility of MAGE-3-peptide-pulsed DCs as a vaccine in bladder cancer immunotherapy, the proliferation of T cells and the activity of cytotoxic T lymphocytes (CTLs) were examined by the MTT method. CTLs were induced by MAGE-3-sensitized DCs, or by ovalbumin (OVA) peptide and non-sensitized DCs as controls, respectively. The results indicated that MAGE-3-sensitized DCs have the ability to promote the proliferation of T cells as well as the cytotoxic activity of CTLs on bladder cancer cells in comparison with OVA peptide and non-sensitized DCs. In other words, DCs sensitized by the MAGE-3 antigen peptide could obviously upregulate the proliferation of T cells, which resulted in the growth inhibition of bladder cancer BIU-87 cells. In addition, MAGE-3-sensitized DCs played an important role in inhibiting the growth of human BIU-87 tumor xenografts in nude mice.

**Key words:** Bladder neoplasms; Dendritic cells; Peptide; MAGE-3; Vaccine