PLENARY

Immune-cell base for cancer therapy

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Abstract

The development of immune cell-based approaches for treatment of cancer has been actively investigated for many years. One strategy that has been demonstrated as an effective method for cancer treatment is adoptive T cell therapy. The principle of this method is using Cytotoxic T lymphocytes (CTL), a crucial component of the adaptive immune system that aids in the control of intracellular pathogens. Effector CTL have the capacity to promote the apoptotic death of specifically targeted cells, using a combination of granule (perforin/granzyme)-and receptor (Fas/tumor necrosis factor)-mediated mechanisms. CTL recognize specific antigen on target cells using an unique T-cell receptor (TCR) when they are presented by class I major histocompatibility (MHC) molecules. In this study, we demonstrated that T lymphocytes were activated and dramatically expanded by stimulation with anti-CD3/CD28 antibodies and culture in the present of IL-2, IL-15 and IL-21 cytokines. These T cells exhibited a predominantly activated phenotype as manifested by an increase in the percentage of cells expressing CD8 and generation of various cytokines such as IL-2, INFγ and TNFa. These findings indicate that stimulation by anti-CD3/CD28 generated effector CTL in adoptive T-cell therapy for cancer.

Keywords

Immune cell, cancer therapy, Cytotoxic T lymphocytes

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References

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