Biomedical Research & Therapy

ISSN: 2198-4093
www.bmrat.org

PLENARY

Immune-cell base for cancer therapy

Van Thanh Ta, Thinh Huy Tran, Binh Thanh Nguyen, Linh Quy Nguyen, Hoai Quy Nguyen, Khanh Van Tran

Hanoi Medicine University, Hanoi, Vietnam

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.

*For correspondence:

tathanhvan@hmu.edu.vn

Competing interests: The authors declare that no competing interests exist.

Received: 2017-08-23
Accepted: 2017-09-01
Published: 2017-09-05

Keywords

Immune cell, cancer therapy, Cytotoxic T lymphocytes

Funding

References