Anti-tumor activity of dendritic cell-cytokine induced killer cells (DC-CIKs) sensitized to HER2 against HER-positive breast cancer cells

Y.Y. Wen¹ and X.S. Hu²

¹Department of Oncology, People’s Hospital of Zhengzhou University (Henan Provincial People’s Hospital), Zhengzhou, China
²Department of Pathology, People’s Hospital of Zhengzhou, Zhengzhou, China

Corresponding author: X.S. Hu
E-mail: xiaoshuhucn@163.com

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ABSTRACT. This study aimed to investigate the cytotoxicity of cytokine-induced killer cells (CIKs) and Her2 epitope peptide-sensitized dendritic cells (DCs), when co-cultured with Her2-positive MCF-7 cells. DCs were separated from the Her epitope peptide-sensitized peripheral blood; the Her epitope combines directly with the MHC-II molecule on the DC surface. The DCs were co-cultured with autologous CIKs. Lactate dehydrogenase (LDH) and ELISA kits were used to detect cytotoxicity of CIKs against MCF-7 breast cancer cells; IL-12 and IFN-γ levels were also analyzed in the supernatant of the culture medium. CIKs activated by DCs sensitized by anchored Her polypeptide antigen have greater cytotoxicity against MCF-7 than CIKs alone or non-anchored antigen sensitized DCs-CIKs (P < 0.01); the IL-12 and IFN-γ levels in the supernatant were higher than that of the control (P < 0.01). In conclusion, DCs anchored by polypeptide antigen alone or in combination with effector cells can be used to develop therapeutic DC vaccines against breast cancer.

Key words: Her2; Dendritic cells; Cytokine-induced killer cells; AE37