THE STUDY OF CD8+ T CELL RESPONSE TO MHC CLASS I-RESTRICTED UNIVERSAL TUMORAL PEPTIDE IN ACCOMPANY WITH VIRAL PEPTIDE

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Background: Breast cancers like as other human cancers are immunogenic and express tumor-associated proteins that can stimulate and generate immune responses in cancer. One of the important antigen that is express in tumors especially in Brest cancers is human Telomerase reverse transcriptase (hTERT). There are some databases that store the information about T cell epitopes, and we used them to identify immunogenic epitopes in proteins that bind in Class I MHC. in this study we used a peptide derived of hTERT molecule accompany with viral peptide derived of influenza that restricted to HLA-A2 (common MHC class I in Iran) for induction of T CD8+ responses in breast cancer patients.

Material and Methods: PBMCs were obtained from blood sample of HLA-A2 positive breast cancer patient incubated with tumor cell line that were transloaded with synthetic peptides from hTERT and viral peptides. Proliferation of T cells analyzed with MTT reaction. After this step, supernatants from previous step evaluated for IFN-γ production by ELISA test. Final step in this study was cytotoxicity assay by measuring LDH on supernatants from first step.

Results: As we expected in this study, stimulation and proliferation of T cells occurred. MTT data showed that proliferation of PBMCs incubated with tumoral and viral peptide more than proliferation of PBMCs incubated with tumoral peptide alone. IFN-γ ELISA assessment and LDH cytotoxicity assay confirmed the MTT assay.

Conclusion: Our findings showed that the viral peptide intensified CTLs responses to tumoral peptide.