

Efficient induction of T cell activation by CH401MAP peptide; Her2 (N:163-182) in vitro

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Peptide vaccine is an attractive approach to induce long-lasting antitumor effector cells for the control of breast cancer progression. While the efficacy depends on patients' HLA type, the selection of epitope peptide according to the binding motif is not always successful. We found an anticancer effect of CH401MAP peptide that has B cell epitope of Her2 by immunizing the peptide to the mice transplanted with a Her2-positive tumor cells. This peptide also possesses multiple T cell epitopes with moderate affinities to HLA I and II molecules covering nearly 80% of Japanese breast cancer patients as long as SYFPEITHI score was estimated. Hence we tried to evaluate the anticancer effect of the peptide on breast cancer patients. We stimulated 140 PBMC from Japanese breast cancer patients with CH401MAP peptide and IL2 every 7days and checked the cellularity, proliferation of T cells and cytokine production after 21days. As a result, lymphocyte proliferation was observed in 64 of 124cases. The cell proliferation and IL-2 production tend to correlate with Her2 expression level. On the other hand, the cellularity did not significantly change between Her2 negative and positive patients. HLA type had some restriction for the response. These results demonstrate that the peptide induced T cell activation in PBMC of Japanese breast cancer patients with high frequency.

Biography

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