**Study and Analysis of HER-2/neu Receptor from Breast Cancer Patients in Indonesia.**

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**ABSTRACT**

Breast cancer is a deadly disease, occupying the first rank among cancer in female patient in Indonesia (the Hospital Information System, 2007). patients with HER2/neu overexpression is 20-30% of the total breast cancer patients. Unfortunately the problem of resistance to monoclonal antibody treatment, trastuzumab, was found. There are several theories that are being suspected as the cause of trastuzumab resistence such as polymorphism, receptor dysfunction and so on. This research was conducted to study and analyze the HER-2/neu receptor in breast cancer patients Indonesia. Research methods were collection of HER-2/neu tissue from Dharmais Cancer Hospital and M. Djamil Hospital Padang, immunohistochemistry, RNA isolation, cDNA, PCR, sequencing, and bioinformatics. Analysis of sequensing result focused on the interaction between the receptor HER-2/neu epitopes with trastuzumab. This study has obtained ethical clearance issued by the Ministry of Health Directorate General of Health Efforts Dharmais Cancer Hospital, National Cancer Center. We have collected 110 breast cancer tissue samples, 20 samples of which were identified as HER-2 +3 using immunohistochemistry method. Of the 20 samples, HER-2/neu receptor has been isolated from 4 samples, 3 samples of which have been successful in sequencing to view its constituent bases. Based on the sequencing analysis obtained so far, there are no variation, especially in epitope area of HER-2/neu receptor of Indonesian breast cancer patients. larger amounts of samples and information would further improve the accuracy of the analysis.

**Key words**: Breast cancer, HER-2/neu receptor, Epitope, Trastuzumab, Monoclonal antibody.