**Preliminary Study of HER-2/neu Receptor Analysis**

**In Indonesian Breast Cancer Patients: Isolation of HER-2/neu Receptor Gene.**

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**ABSTRACT**

Based on data from the Hospital Information System(SIRS) in 2007, breast cancer occupied as first ranking as a deadly disease for women cancer patients in Indonesia, followed bycervical cancer. Generally, patients who come to the doctor are already in an advanced stage, due to their low education, poverrty, and feeling of shame. 20-30% of the total breast cancer patients, having HER-2/neu over expression. HER-2/neu breast cancers are invasive, with a high malignancy rate and have patient low life expectancy. Monoclonalantibody, trasztuzumab, is one of medication used to cure this disease. HER-2/neu receptors are as the target of trastuzumab.Unfortunately the problem of resistance found in the use of trastuzumab as a single agent, 70-80%. There are many theories suspected as the cause of trastuzumab mechanism resistance, one of them is polimorphisme. This experiment was a preliminary study of HER-2/neu receptor in breast cancer patient in Indonesia. Here we showed the isolation result of HER2/neu receptor gene. The experiment methods were breast cancer tissue sample collection, immunohistochemistry(IHC), primer design, RNA extraction, cDNA, PCR and sequensing, resepctively. As the result, we have managed to collect 110 breast cancer tissue. Of the total 110 samples, 20 samples of breast cancer patients identified as HER-2/neu+3 through IHC screening. Of the 20 samples,4 DNA fragments (2127bp) have successed isolated. This 4 DNA fragment identified as a gene encoding HER-2 receptor using BLAST.Due to the variation of HER-2/neu overexpression in the tissue sample, while the part is taken as a source of RNA isolation is only a little of it, the possibility to use of non HER-2/neu overexpression part had a large. The successful of the HER-2/neu receptor issolation is an important stage for the study and analysis of HER-2/neu receptor in Indonesia for the future steps experiment.

Key Words: HER-2/neu Recepor gene, Breast Cancer, Trastuzumab, Resistance.