

A home-kit device that detects breast cancer through urine

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This study aimed to examine the possibility of designing a home-kit that detects breast cancer through urine. The study methodology contained three phases. First, a research was conducted to study the biomarkers in the body fluids' of breast cancer patients including Saliva, urine and blood. Second, a literature research was written to list all the biomarkers in the body fluids and to give all the biomarkers possible ways to be detected easily, after the literature research was done it was concluded that the most accurate way is to make a home-kit that uses the general sandwich ELISA and it works by detecting the biomarkers in the patient's urine, this conclusion was concluded based on the paper "Proteomic Analysis of Urine to Identify Breast Cancer Biomarker Candidates Using a Label-Free LC-MS/MS Approach". Afterwards, with the supervision of the University Of Science and Technology the design of the home-kit was decided to work as a general ELISA sandwich technique that uses highly specific monoclonal antibodies that are directed against the breast cancer's biomarkers. Third, As a near future step, an ELISA procedure is going to be performed on the urine of healthy controls and breast cancer patients in order to turn it the kit into a home-kit which will happen in the following few weeks. In conclusion, the results of the study showed the high accuracy that the kit will yield with the highly specific antibodies and the successful and highly used method of pregnancy test (Sandwich ELISA).