Breast cancer is the most common form of cancer in women. Although noteworthy efforts have been made to accomplish early detection and efficient treatment, recurrent breast cancer cannot be cured.

Breast cancer is described as recurrent or relapsed if it appears after being treated initially. It is the major cause of the breast cancer related deaths. Early prediction of breast cancer recurrence would dramatically increase treatment possibilities and survival and a blood based test to follow the patient for these purposes would be of significant importance.

A biomarker can be defined as any substance that can be measured in the body or its products in order to predict or determine the incidence of a disease.

This study attempted to create a test measuring the levels of a group of selected proteins that would be measured in blood plasma. This test, called AFFIRM, would then be applied to the blood plasma of patients collected when the breast cancer was first discovered and treated as well as when it was discovered the second time, i.e. the recurrent breast cancer. AFFIRM uses the major technologies recombinant antibodies and mass spectrometry (MS). The recombinant antibodies are coupled to magnetic beads and are used to target proteins that would serve as biomarkers. The targeted proteins would then be digested then analysed with MS to produce a specific readout.

The ability of the test created in this study will provide a proof-of-concept and the basis for refinements and application to a larger and more detailed clinical study that will hopefully be able to define the early detection and monitoring of breast cancer patients at risk of suffering a relapse.