Diagnostic Methods for Detecting Breast Cancer

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Technology description

Accurate detection of a person's risk of cancer remains a challenge for researchers and medical practitioners. In cancer patients, certain microRNAs (miRNAs) are present in serum at higher or lower levels in comparison to healthy controls. The concentration of some miRNAs that have traditionally been used as standards to normalize data between samples are not consistent and therefore poor reference models. For example, concentrations of the standard miRNA U6 have been found elevated in the sera of breast cancer patients who did not have active disease as well as in those with overt metastasis. This technology presents a more consistent diagnostic standard for detecting and monitoring the progression of cancer.

Compositions and methods for detecting cancer marker concentrations in serum relative to a standard miRNA as a diagnostic indicator of metastatic disease.

This technology provides a dependable cancer screening method using SNORD44 small nuclear RNA (snRNA) as a standard reference. SNORD44 levels are similar in the sera of healthy and clinically cancer-free breast cancer patients. The method enables the user to implement a more accurate cancer testing method by comparing the concentration of reference RNA to the concentration of a breast cancer-associated miRNA in a patient sample. A convenient and comprehensive kit is provided for detecting the presence of a breast cancer-associated miRNA, including materials that can reliably detect the presence and/or expression levels of the reference.

Publications

· Persistent upregulation of U6:SNORD44 small RNA ratio in the serum of breast cancer patients. Appaiah HN, Goswami CP, Mina LA, Badve S, Sled ge GW Jr, Liu Y, Nakshatri H. Breast Cancer Res. 2011 Sep 13;13(5):R86.

Application area

• Breast cancer diagnostics and research

• Diagnostic reagents and kits for the early detection of cancer
• Methods for assessing the existence of cancerous or pre-cancerous cells

Advantages

• Provides a reliable testing method for breast cancer
• Increases the accuracy of cancer diagnosis

Institution

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Inventors

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