

Proteomics-based identification of serum albumin precursor autoantibody as serum marker in infiltrating ductal breast carcinomas

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Abstract

The identification of tumor antigens that elicit an antibody response may have utility in breast cancer screening, diagnosis and in establishing prognosis. Until now, autoimmunity in cancer has been mainly revealed in solid tumors. This study was to apply the proteomic approach to the identification of proteins that commonly elicit a humoral response in women Infiltrating Ductal Carcinomas. Sera from 40 newly diagnosed patients with breast cancer and 42 healthy individuals as controls were analyzed by two-dimensional gel electrophoresis and matrix-assisted laser desorption/ionization-time of flight mass spectrometer (MALDI-TOF/MS). Protein expression was evaluated using PDQuest 2-D software. As a result, autoantibody against serum albumin precursor was detected in breast cancer patient's sera.

The immunoproteomic approach implemented here offers a powerful tool for determining novel tumor antigens that elicit a humoral immune response in patients with invasive breast cancer. This antigen and/or their related circulating antibody may display clinical usefulness as potential diagnostic markers and provide a means for a better understanding of the molecular mechanisms underlying breast cancer development.