Expression and significance of SATB1 in the development of breast cancer

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ABSTRACT. Special AT-rich sequence binding protein 1 (SATB1) is a recently discovered gene regulator that can promote the growth and metastasis of breast cancer. However, its expression in different stages of breast cancer development have not been examined. We explored the role of SATB1 in the development of breast cancer by detecting SATB1 expression levels in different stages of breast cancer. SATB1 expression was determined using an immunohistochemical streptavidin peroxidase method; the relationship between clinicopathological features of breast cancer and SATB1 expression was analyzed using the χ² test. Positive rates of SATB1 protein in normal breast tissue, normal breast ductal hyperplasia tissue, precancerous lesions of breast cancer, non-invasive cancer, early invasive carcinoma, and invasive breast cancer tissue were, respectively, 6.25 (2/32), 6.4 (3/47), 20.4 (10/49), 45.0 (9/20), 52.9 (9/17), and 76.6% (72/94). SATB1 in the latter 3 groups was significantly higher than in the first 3 groups (P < 0.05). The positive rate of SATB1 protein in invasive non-special types of breast cancer (88.5%, 54/61) was significantly higher than in the special type of invasive breast cancer (54.5%, 18/33) and early invasive breast cancer (52.9%, 9/17) (P < 0.05). SATB1 protein expression in
breast cancer with lymph node metastasis was generally increased, and the difference was statistically significant ($P < 0.05$). SATB1 protein expression showed an increasing trend in different stages of breast cancer development. Overexpression indicated poor prognosis.

**Key words:** Breast cancer; Immunohistochemistry; Special AT-rich sequence binding protein 1