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### The functional state of the chaperone Hsp27 as a molecular marker of lymph node metastases of breast cancer

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**Background:** Heat shock protein 27 kDa (Hsp27) is a chaperone of the sHsp (small heat shock protein). The common functions of sHsps are chaperone activity, inhibition of apoptosis, regulation of cell development, and cell differentiation, take part in signal transduction.

**Objective:** To study the intracellular localization of phosphorylated features and non-phosphorylated forms of Hsp27 in primary breast cancer cells and to evaluate their relationship with regional lymphatic metastasis.

**Materials & Methods:** Tumor biopsies of breast tissue were collected from 100 patients with a confirmed diagnosis of invasive carcinoma, nonspecific type, between the ages of 31-80 years. Immunohistochemistry was used to determine the intracellular localization of phosphorylated and non-phosphorylated forms of Hsp27.

**Results:** The result of this study showed that biopsies from patients with lymph node metastasis exhibited significantly higher levels of phosphorylated forms of Hsp27 in the nucleus and cytoplasm compared with the group without lymph node metastasis. Analysis showed that the expression of phosphorylated forms of the chaperone Hsp27 correlates with the amount and percentage of lymph node metastases affected.

**Conclusion:** The nuclear expression of phosphorylated and non-phosphorylated forms of the chaperone Hsp27 is a marker of tumor cells associated with lymphatic metastasis of breast cancer.

#### Biography

Evgeniya V Kaigorodova, PhD, MD is a physician of clinical laboratory diagnostics of the highest category. She is a leading researcher, Department of Pathological Anatomy and Cytology, Tomsk Cancer Research Institute (2012-present); leading researcher Laboratory of Translational Cell and Molecular Biomedicine, Tomsk State University (2014-present). She completed her PhD from Siberian State Medical University in 2008 and Postdoctoral studies from Siberian State Medical University. She is a Professor of the Department of Biochemistry and molecular biology of the Siberian State Medical University (2014-present). She has published more than 50 papers in reputed journals.

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