

Development of novel diagnostic and prognostic biomarker in breast cancer

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Cancer is a complex disease and most cancer treatments are limited to chemotherapy, radiation, and surgery. Recent evidences suggested that development of cancer progression and metastatic spread could be determined by the expression profilation of some proteins, considered as the markers. The discovery of cancer biomarkers has become a major focus of cancer research, which holds promising future for early detection, diagnosis, monitoring disease recurrence and therapeutic treatment efficacy to improve long-term survival of cancer patients. Breast cancer is the predominant malignancy where oncologists use predictive markers clinically to select treatment options with steroid receptors which are being used for many years. Osteopontin (OPN), a pro-inflammatory, chemokine like, calcified ECM associated protein plays important role in determining the oncogenic and angiogenic potential of various cancers including breast. During last several years, many groups including ours have demonstrated that OPN regulates tumor growth and metastasis in breast and other cancers. We have analyzed the expression of OPN in various grades of breast tumor tissues and the data revealed that OPN is a diagnostic and prognostic marker that may have value in a diagnostic panel along with other conventional breast cancer markers. Finally, our data as well as the data published by others suggested that OPN may act as early diagnostic and prognostic tissue and serum marker in breast cancer.