Estrogen dependence of breast carcinoma: The role of estrogen-regulated proteins

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Hormone dependence of human breast cancer has been well documented. Failure of 30%-40% of patients with estrogen-receptor positive cancers and 20%-30% of patients expressing both estrogen (ER) and progesterone receptors (PR) to respond to endocrine therapy, together with observation that 10% of patients with tumors lacking both receptors do respond, means that other markers of hormone responsiveness should be used. One of these markers is pS2 protein, which was first detected in estrogen dependent breast cancer cell line MCF-7. Our purpose was to answer the question whether the expression of pS2 may be a marker of functional heterogeneity with respect to the steroid hormone receptor (SR) status. One of the most studied estrogen-regulated proteins in breast cancer is a cathepsin-D. Cathepsin-D has a role in promoting tumor growth as a proteolytic enzyme. The possible usefulness of cathepsin-D as a prognostic factor depends of its dependent as well as independent associations with established factors such as axillary status, tumor size and SR status. Expression of protein pS2 as well as cathepsin-D and other biomarkers may identify distinct subset of ER positive carcinomas, indicating the possible usefulness of these estrogen-regulated proteins in clinical practice.