

Myoepithelial Markers in Diagnostic Immunohistochemistry

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Editorial Note

Myoepithelial cells are contractile elements found in salivary, sweat and mammary glands that show a combined smooth muscle and epithelial phenotype. In the normal breast, the ductal and acinar units are lined by two cell layers, the inner layer lining the lumen and an outer layer of myoepithelial cells. An intact myoepithelial cells layer is seen in both benign and in situ lesions, whereas loss of the myoepithelial cells layer is considered the rule for the diagnosis of invasive cancer.

Because myoepithelial cells are not always readily identifiable on routine hematoxylin and eosin-stained sections, many immunohistochemical methods have been used to highlight an intact myoepithelial cells layer. Recent studies have reported CD10 and smooth muscle myosin heavy chain expression in myoepithelial cells of the breast, supporting their use as markers to help distinguish invasive breast carcinoma from ductal carcinoma in situ. CD10 is a 100kD cell surface metalloendopeptidase called neprilysin which inactivates a variety of biologically active peptides. It was initially identified as the common acute lymphoblastic leukemia antigen. Subsequent studies, however, have shown that CD10 is expressed on