Loss of the myoepithelial/basal layer is the gold standard for the diagnosis of invasive breast carcinomas. Immunohistochemical markers used are commonly directed against muscle and myoepithelial cell layer related antigens, including smooth muscle actin (SMA, cat. # PDM003), p63, myosin, and calponin (cat. # Mob 345), to distinguish the myoepithelial cell layer from the epithelial layer and surrounding fibroblasts [1].

SMA and myosin have been used as myoepithelial markers in breast pathology diagnosis as sensitive indicators of myoepithelial differentiation [2]. Calponin, a protein belonging to the contractile apparatus in smooth muscle cells, can help distinguish benign from invasive breast carcinomas. Loss of these markers indicates tumor invasion and separates invasive carcinoma from ductal carcinoma in situ (DCIS). In addition, p63, a highly specific cell marker for the nuclei of myoepithelial cells, is a diagnostic tool for invasive breast cancer. To minimize false negatives, a panel of 2 or more markers is recommended.

References:

Catalogue numbers -
1 Image 1 - Catalog Number Mob 001
2 Image 2 - Catalog Number Mob345
3 Image 3 - Catalog Number PDM175