CADHERIN EXPRESSION IN A BREAST CANCER CO-CULTURE SYSTEM AND ITS EFFECT ON CELL-CELL ADHESION

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Abstract

In the early stages of breast cancer metastasis, epithelial cells penetrate the basement membrane and invade the surrounding stroma, where they encounter stromal fibroblasts. Paracrine signaling between fibroblasts and epithelial tumor cells contributes to the metastatic cascade, but little is known about how adhesive contacts between these two cell types contribute to metastasis. Here we show that MCF-7 breast cancer epithelial cells and normal breast fibroblasts form heterotypic adhesions when grown together in co-culture. Both cell types express multiple members of the cadherin superfamily, including the atypical cadherin, cadherin-23, when grown in isolation and in co-culture. Cadherin-23 localizes to homotypic adhesions between MCF-7 cells and to heterotypic adhesions between the two cell types, and plays a role in mediating these adhesive interactions. Finally, we show that cadherin-23 is upregulated in breast tissue samples and may play a role in the early stages of metastasis.