

Galectin-1-driven upregulation of SDF-1 in pancreatic stellate cells promotes pancreatic cancer metastasis

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Abstract:

Galectin-1, mainly expressed in activated pancreatic stellate cells (PSCs), is involved in many important cancer-related processes. However, very little is known how Galectin-1 modulates PSCs and subsequently impacts pancreatic cancer cells (PCCs). Our chemokine antibody array and in vitro studies demonstrates that Galectin-1 induces secretion of stromal cell-derived factor-1(SDF-1) in PSCs by activating NF- κ B signaling. The secreted SDF-1 increases migration and invasion of PCCs. Knockdown of Galectin-1 and inhibitor-mediated blockade of SDF-1 as well as its ligand CXCR4 and NF- κ B verifies the findings. In vivo experiment by knockdown of Galectin-1 in PSCs further demonstrates the conclusion. Collectively, the present studies demonstrate that Galectin-1-driven production of SDF-1 in PSCs through activation of NF- κ B promotes metastasis in PDAC, offering a potential target in the treatment of pancreatic cancer.

Full text:

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