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**Title: Identifying and targeting the support of never healing wounds, cancer associated fibroblasts in liver tumors**

Chronic liver disease results in fibrosis, thereby creating a suitable environment in which primary liver tumors develop. Furthermore, the liver is an important site for metastasis of other tumors such as colon, breast, lung and melanoma cancer. In both cases, patients have a poor prognosis and liver cancer is associated with high mortality. Most anti- liver cancer treatments focus on the rapidly dividing and evolving cancer cells, unfortunately unsuccessfully. In this project we will use an innovative approach to investigate the cells in the tumor environment that support tumor growth. These cancer associated fibroblasts, have many characteristics of liver resident stellate cells. Stellate cells in a healthy liver are involved in vitamin A storage and control the amounts of connective tissue in the organ. Upon liver injury, stellate cells activate and become scar producing myofibroblastic cells. Because of the phenotypic overlap between cancer associated fibroblasts and stellate cells, we will compare these cell types more in depth. We would define if cancer associated fibroblasts are a homogeneous population that could be therapeutically targeted or whether different cancer associated fibroblast-types exist with different roles in tumor support and in that case, targeting subtypes would be beneficial. We will use strategies described for stellate cells to deliver drugs to cancer associated fibroblast and evaluate the impact on tumor growth.

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