The Contribution of Microenvironment in Cancer Therapy and Carcinogenesis

Our laboratory studies ionizing radiation from its action as a carcinogen and its use as a cancer therapy viewed from the perspective of the tissue or tumor microenvironment. In studies of carcinogenesis we focus on breast cancer and use mouse mammary gland and non-malignant human epithelial cells to understand to earliest events that establish a ‘pre-cancer’ niche that supports survival of initiated cells. In cancer therapy, our current studies use preclinical models of breast, brain and lung cancer to biologically augment response to radiotherapy by manipulating the tumor microenvironment by inhibiting critical signaling from TGFbeta.

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