

CELL-ECM INTERACTIONS AND THEIR RELEVANCE TO CANCER

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Perturbed microenvironmental conditions play important roles in tumor initiation, progression, and therapy response; however, the underlying molecular, cellular, and tissue-level mechanisms remain relatively poorly understood. By integrating biomaterials, tissue engineering, and microfabrication strategies our lab has developed a variety of *in vitro* and *in vivo* models to study tumorigenesis under pathologically relevant conditions. In particular, we are applying these model systems to evaluate the regulatory roles of extracellular matrix (ECM) physicochemical properties on tumor-stroma interactions with a focus on tumor angiogenesis and metastasis. This talk will summarize some of our efforts in this area and discuss tumor-mediated differences in ECM physicochemical properties, and the resulting functional consequences on tumor cell behavior.