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Current Research:	Structure and dynamics of lipid membrane Physics of cells and tissues	

Spatio-temporal pattern of deformation and migration of pancreatic cells from different precancerous lesions

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The pancreatic ductal carcinoma (PDA) is one of the most lethal cancers. It is a challenging issue to distinguish different kinds of precancerous lesions of PDA from the cell shape in the field of pathology. Here we investigated the morphological dynamics of two kinds of precancerous lesions of PDA, pancreatic intraepithelial neoplasia (PanIN) and intraductal papillary mucinous neoplasia (IPMN). We seeded cells onto the supported membranes functionalized with laminin E8 fragment and yielded the active deformation of the adhesion zone with label-free, reflection interference contrast microscopy (RICM). We discuss the quantitative difference of cell motion and deformation and how it is related to the phosphorylated activity of adhesion-mediating molecules.