**Role of KRAS mutations in the collective motility and invasion of tumor cells**

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We established human cell lines that overexpress KRAS variants: the wild type, as well as variants carrying the most common G12C, G12D and G12V mutations. In these cells we verified both the increased activity of the RAF-MEK-Erk and PI3K-AKT-mTOR signaling pathways, and the membrane-bound localization of GFP-KRAS proteins. We established pilot experiments to explore collective cell motility both in confluent 2D cultures as well as in 3D collagen gel invasion assays. Our computational model linking collective cell motility with intracellular polarity dynamics was tested in experiments directly perturbing the stability of front/rear cell polarity.