The Disruption of SFKs in Neuroblastoma Cells Leads to Decreased Cell Migration

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Neuroblastoma is a highly lethal childhood cancer that derives from incorrectly differentiated stem-cell-like neural crest cells. Cell signaling appears to be crucial for neuroblastoma regulation and signaling proteins such as the SRC Family Kinases (SFKs) can have profound effects on cell outcomes. It was hypothesized that SFK disruption would decrease cell migration. We disrupted the SFKs using PP2, an SFK inhibitor, and the knockdown of PAG1, a scaffolding protein, and apparent regulator of the SFKs. The cells with disrupted SFKs exhibited decreased cell migration and the PAG1 knockdown cells exhibited decreased cell adhesion. The results from this experiment lay the groundwork for future studies of PAG1 in relation to the SFKs and the use of the hanging-drop assay to create neurosphere conditions to examine migration and adhesion. Understanding the molecular mechanisms that regulate migration and adhesion in neuroblastoma could allow for new treatments that combat cancer metastasis and the prediction of cell fates, leading to better cancer diagnosis and more targeted treatments.