VRK1: A protein that reduces the survival of patients with neuroblastoma

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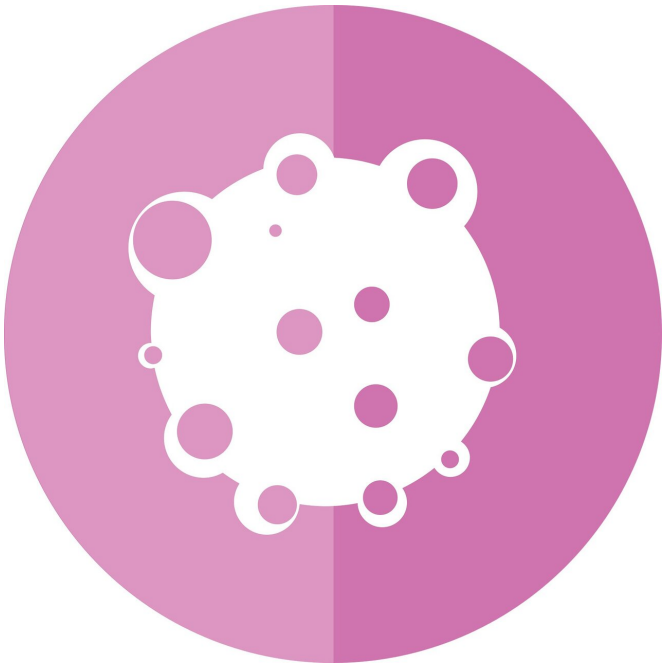

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Researchers from the Departments of Cell Biology and Medical Physiology at the University of Seville have identified that a high expression of the human protein VRK1 is associated with tumor aggressiveness and low survival among neuroblastoma patients. Aggressive neuroblastoma is one of the most common solid childhood cancers and causes disproportionately high mortality in affected children. Although advances have been made in recent years, the outlook for recovery in children affected by aggressive neuroblastoma remains low and a better understanding of this tumor's biology is needed in order to create new treatments and prognostic tools.

Researchers have characterized the function of VRK1 in neuroblastoma tumor cells and have determined that this protein is essential for tumor cell growth and proliferation. "By studying the expression of this protein in tumors, we were able to identify a priori patients where tumor progression is going to be worse, even in groups where current tools do not predict that behavior," notes Francisco M. Vega.

This study suggests that VRK1 works in conjunction with other oncogenes such as MYCN, which is heavily affected in this cancer, to boost tumor progression and make it more aggressive. Therefore, the researchers suggest that inhibiting VRK1 could be a new strategy for cancer therapy in neuroblastoma. "VRK1 is a protein kinase. These are some of the best targets for targeted cancer treatment, as we can potentially produce inhibitors in the laboratory that override their activity," explains Professor Vega.

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More information: Ana Colmenero-Repiso et al. Identification of VRK1 as a New Neuroblastoma Tumor Progression Marker Regulating Cell Proliferation, *Cancers* (2020). DOI: 10.3390/cancers12113465

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