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### The retinoic acid receptor controls the mechanobiology in pancreatic stellate cells to suppress matrix remodeling and inhibit cancer cell invasion

Pancreatic ductal adenocarcinoma (PDAC) is one of the deadliest cancers with a 5-year survival rate of less than 4%. This rate has remained unchanged for the last 40 years despite advances in conventional therapies targeting cancer cells. PDAC tumors are characterized by remarkable matrix stiffness and a strong desmoplastic reaction that is mediated by the main cellular component in the tumor microenvironment pancreatic stellate cells (PSCs). Activated PSCs cross-talk with cancer cells to promote tumor growth, metastasis and chemoresistance, but the molecular mechanism that keeps PSCs persistently activated remains unknown. Our studies implicate retinoic acid receptor as a regulator of traction forces and mechanosensing in PSCs and this regulation influences the capacity of PSCs to migrate, to remodel the extracellular matrix (ECM) and to promote pancreatic cancer cell invasion.

#### Biography

Armando Del Rio Hernandez has obtained his PhD in Chemistry from the Complutense University in Madrid. Following this, he has completed a period of Post-doctoral training in the US. He has worked at Columbia University of New York as a Research Fellow first and later as a Research Associate. He currently leads the Cellular and Molecular Biomechanics group in the Department of Bioengineering at Imperial College London. He is a European Research Council Fellow and Editorial Board Member of several journals.

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