Role of Extracellular Vesicles in the Tumour Microenvironment

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Video Byte

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Abstract

In cancer cell communication, some messengers are tiny. Extracellular vesicles (EVs) are small, cell-derived membranous structures released by almost all cell types. EVs transport lipids, proteins, and nucleic acids from cell to cell, and they can play a critical role in tumor development and progression. A new review discusses the role of EVs in the tumor microenvironment. Although tumor-derived EVs are known to regulate signaling pathways to orchestrate tumor progression, EVs from non-malignant cells also contribute to communication in the microenvironment. EVs can regulate angiogenesis, epithelial-mesenchymal transition, extracellular matrix remodeling, and immune escape. Their central role in cancer progression makes them ideal targets for clinical applications, including diagnostic and therapeutic measures. Disrupting EV biogenesis and function may allow clinicians to repurpose these tiny messengers, turning them into a tool for immunotherapy and drug delivery. Future research on EVs will improve our ability to target this pathway for cancer therapy.