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Tumor-derived microvesicles and the cancer microenvironment

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Abstract

Tumor cells release microvesicles (MVs) that may remain in the extracellular space in proximity to the cell of origin, or that may migrate to distant sites by entering biological fluids. Increasing evidence indicates that MVs are mediators of cell-to-cell communication which are able to deliver specific signals, both within the tumor microenvironment and in the long-range. MVs are able to transfer bioactive lipids and proteins, including oncogene products and receptors, from the cell of origin to recipient cell. In addition, MVs may induce epigenetic changes in recipient cells by transferring genetic information in the form of mRNA, microRNA and oncogenes. Several changes in the phenotype and function that occur in stromal cells within the cancer microenvironment have been ascribed to tumor cell-derived MVs. In this review we discuss the various biological actions of tumor-derived MVs and their potential role in tumor biology.