Metastasis of cancer cells to sites distant from the primary tumor is the leading cause of cancer-related death, and there is growing evidence that platelets aid the dissemination of cancer cells.

In this issue of JCI Insight, Pierre Henri Mangin and colleagues at the Etablissement Français du Sang-Alsace have shown that a molecule expressed on platelets, known as \( \beta_6 \alpha_1 \) integrin, participates in tumor metastasis by promoting interactions between tumor cells and platelets. Compared to control animals, mice lacking \( \beta_6 \alpha_1 \) integrin specifically on platelets exhibited decreased lung metastasis after injection of tumor cells intravenously or into the mammary fat pad.

Mangin and colleagues determined that the tumor cell protein ADAM9 binds platelet \( \beta_6 \alpha_1 \) integrin to promote platelet activation and tumor cell extravasation. Importantly, antibody-mediated blockade of \( \beta_6 \alpha_1 \) integrin inhibited tumor metastasis in murine models of breast cancer and melanoma. These findings suggest that disruption of tumor/platelet interactions could prevent metastasis.

More information: Elmina Mammadova-Bach et al, Platelet integrin \( \beta_6 \alpha_1 \) controls lung metastasis through direct binding to cancer cell–derived ADAM9, JCI Insight (2016). DOI: 10.1172/jci.insight.88245

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