

Blocking beta1-integrin to treat cancer

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Targeting the function of a protein known as beta1-integrin might represent a novel approach to cancer treatment, according to a paper published online in The EMBO Journal this week. Blocking the action of this protein could help to prevent the formation of metastases by reducing tumour cell proliferation and inducing cell senescence.

Integrins are a family of transmembrane receptors that help maintain tissue integrity by attaching cells to the surrounding extracellular matrix and preventing them from migrating around. These proteins are also important for cell survival and proliferation, and have been shown to contribute to tumour progression in several ways.

Angelika Kren and colleagues investigated transgenic mice with insulinomas – tumours of pancreatic beta cells, which metastasize in pancreas lymph nodes. When the authors blocked beta1-integrin function in these mice, tumour cells started disseminating into lymphatic blood vessels because they were not attached to anything any more. However, the cells did not elicit metastasis and were unable to form tumours – they stopped growing and became senescent.

The authors suggest that the ablation of beta1-integrin function, and the resulting induction of cellular senescence, represent a potential therapeutic goal for the treatment of cancer. Future research should help to identify the molecular players and pathways involved.

Source: European Molecular Biology Organization

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