

'Flightless' molecule may prevent cancer from spreading from one tissue to another

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Thanks to the "flightless" molecule, the spread of cancer from one tissue to another may one day be grounded. In a new report published in the August 2012 print issue of *The FASEB Journal*, laboratory experiments show that "flightless" (named after its effects on fruit flies) increases the "stickiness" that causes cells, including cancer cells, to attach to underlying tissue, which in turn, slows their movement throughout the body.

"The study of flightless and its role in the control of cell movement offers the promise of developing [new drugs](#) and treatments to control diseases in which cell movement has gotten out of control," said Christopher A. McCulloch, from Matrix Dynamics Group at the University of Toronto in Canada. "We hope that one day treatments to regulate cell movement could be used to bring under better control the spread of [cancer cells](#) from a tumor into the rest of the body."

To make this discovery, scientists used three groups of cells that made either normal amounts of flightless, or were genetically modified to produce no flightless, or to make above-normal amounts of flightless. Researchers then studied the rate of movement of these different groups of cells and examined the specialized parts of cells that enable them to stick to tissues. When the stickiness of the cells to underlying tissues was examined, results showed that flightless had a marked effect on how quickly cells could detach from underlying tissues and move forward in response to stimuli that encourage them to migrate.

"Fighting a single tumor in one organ is hard, but the fact that many cancers metastasize adds new obstacles to treatment," said Gerald Weissmann, M.D., Editor-in-Chief of The [FASEB Journal](#). "This report on 'flightless' is an important first step toward preventing cancers from taking off to other parts of the body."

More information: Ibrahim Mohammad, Pamma D. Arora, Yeganeh Naghibzadeh, Yongqiang Wang, Jeff Li, Wendall Mascarenhas, Paul A. Janmey, John F. Dawson, and Christopher A. McCulloch. Flightless I is a focal adhesion-associated actin-capping protein that regulates cell migration *FASEB J.* [doi:10.1096/fj.11-202051](https://doi.org/10.1096/fj.11-202051)

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