3-D Models of Spreading Tumors May Help Fight Cancer

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University of Kentucky researchers Ren Xu and Gaofeng Xiong at the Markey Cancer Center and the Department of Pharmacology and Nutritional Sciences show it is possible to create a three-dimensional (3-D) model system to investigate how breast cancer cells invade lung tissue in a study that was featured on the front cover of the journal, *Integrative Biology*.

Advanced breast cancer tumors shed cells that can colonize other tissues in a process known as metastasis. If physicians detect malignant breast tumors early, they can remove tumors before they metastasize. After tumors gain the ability to traverse the bloodstream, they become much more difficult to treat. In order to develop treatments targeting metastatic cancers, researchers need new models that more accurately reflect cancers physicians treat in the clinic.

3-D models like the one Xu developed may give researchers the model they need.

Xu's laboratory created the 3-D lung tissue matrix by removing the cells from the tissue while preserving the extracellular matrix (ECM) that make up the tissue's structural components. The researchers then showed breast cancer cells could colonize in the lung matrix in a manner resembling metastasizing breast cancer in patients in the clinic.

Xu believes the 3-D model may help develop drugs that inhibit breast cancer progression.

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Provided by University of Kentucky

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