

Researchers identify gene involved in lung tumor growth

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Lung cancer researchers at St. Joseph's Hospital and Medical Center in Phoenix, Ariz., in collaboration with researchers at the Translational Genomics Research Institute and other institutions, have identified a gene that plays a role in the growth and spread of non-small cell lung cancer tumors, opening the door for potential new treatment options.

The study, titled "Elevated Expression of Fn14 in Non-Small Cell Lung Cancer Correlates with Activated EGFR and Promotes [Tumor Cell Migration](#) and Invasion," was published in the May 2012 issue of [The American Journal of Pathology](#). Landon J. Inge, PhD, is the lead scientist in the thoracic oncology laboratory at St. Joseph's Center for Thoracic Disease and Transplantation and was a member of the study's research team.

Lung cancer is the leading cause of cancer deaths worldwide, and approximately 85 percent of these cancers are non-small cell lung cancers (NSCLC). Patients with NSCLC frequently have tumors with mutations in the [epidermal growth factor receptor](#) (EGFR) gene. When activated, this mutated gene leads to tumor development and growth. By studying lung cancer samples from patients who had undergone tumor resection, the researchers discovered that many patients with EGFR mutations also exhibited higher than normal levels of the gene fibroblast growth factor-inducible 14 (Fn14). The researchers believe that activation of EGFR can lead to increased expression and activity of the Fn14 gene.

The research team also discovered that while over-expression of Fn14 enhances [lung tumor](#) formation and metastasis, suppression of Fn14 reduces metastasis in NSCLC.

"Our data suggest that Fn14 levels can contribute to NSCLC cell migration and invasion," says Dr. Inge. "Thus, [tumor suppression](#) through the targeting of Fn14 may prove to be a therapeutic intervention in NSCLC and other tumor types."

The Fn14 gene has been found to be elevated in other types of tumors, as well, including glioblastoma and certain types of breast cancer, suggesting that Fn14 may be a therapeutic target for multiple cancer therapies.

Provided by St. Joseph's Hospital and Medical Center

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