

# Researchers ID gene linked to lung cancer

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Researchers at Johns Hopkins, as part of a large, multi-institutional study, have found one gene variant that is linked to an increased risk of lung cancer. The study will be published in the April 3 issue of *Nature Genetics*.

The research team collected DNA from 1,154 smokers who have lung cancer and 1,137 smokers without lung cancer. Each DNA sample was analyzed at more than 300,000 points, looking for variations—known as single nucleotide polymorphisms, or SNPs for short—between those with cancer and those without. They then analyzed the top 10 SNPs in an additional 5,075 DNA samples from smokers with and without lung cancer.

Two of the 10 SNPs were consistently associated with lung cancer risk and both of them are located in chromosome 15 inside a region that contains genes for the nicotinic acetylcholine receptor alpha subunits 3 and 5, which already are suspected to play a role in lung cancer progression.

The research team then wondered if these genetic associations relate to nicotine dependence, and found that the same two SNPs also are weakly associated with smoking behavior.

“The power of genome-wide analysis is to look at many markers and many samples at once, which can reveal weak genetic associations in complex diseases like lung cancer.” says Kimberly Doheny, Ph.D., assistant director of the Center for Inherited Disease Research at the

McKusick-Nathans Institute of Genetic Medicine at Johns Hopkins.

Source: Johns Hopkins Medical Institutions

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