Researchers identify biomarker for smoker's lung cancer

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Mayo Clinic researchers have shown that a specific protein pair may be a successful prognostic biomarker for identifying smoking-related lung cancers. The protein—ASCL1—is associated with increased expression of the RET oncogene, a particular cancer-causing gene called RET. The findings appear in the online issue of the journal *Oncogene*.

"This is exciting because we've found what we believe to be a 'drugable target' here," says George Vasmatzis, Ph.D., a Mayo Clinic molecular medicine researcher and senior author on the study. "It's a clear biomarker for aggressive adenocarcinomas. These are the fast-growing cancer cells found in smokers' lungs."

ASCL1 is known to control neuroendocrine cell development and was previously linked to regulation of thyroid and small cell lung cancer development, but not smoking-related lung cancer. The research also showed that patients with ASCL1 tumors with high levels of the RET oncogene protein did not survive as long as ASCL1 patients with low levels of RET.

When researchers blocked the ASCL1 protein in lung cancer cell lines expressing both genes, the level of RET decreased and tumor growth slowed. This leads researchers to believe this mechanism will be a promising target for potential drugs and a strong candidate for clinical trials.

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