

Specific oncogene plays a role in lung squamous cell carcinoma

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The identification of an oncogene (called BRF2) specific to lung squamous cell carcinoma suggests that genetic activation of this oncogene could be used as an identification marker for this type of lung cancer. Furthermore, this oncogene may provide a new target for therapeutics for lung squamous cell carcinoma. These findings come from a study by William Lockwood and colleagues from the BC Cancer Agency's Research Centre in Vancouver, Canada, and are reported in this week's *PLoS Medicine*.

Lung cancer is the most common cause of cancer-related death, killing 1.3 million people every year worldwide. Most cases of [lung cancer](#) are "non-small cell lung cancers" of which there are 2 main types: squamous cell [carcinoma](#) and adenocarcinoma.

The authors used a comparative genetic hybridisation technique to show that the focal amplification of chromosome region 8p12 plays a role in the development of lung [squamous cell carcinoma](#) (in about 40% of cases) but not in the development of lung adenocarcinoma where DNA loss in this chromosomal region is the most common alteration. The [oncogene](#) BRF2 was frequently activated in pre-invasive stages of lung squamous cell carcinoma — carcinoma in situ and dysplasia.

The authors conclude: "This is the first study, to our knowledge, to show that the focal amplification of a gene in chromosome 8p12 plays a key role in squamous cell lineage specificity of the disease. Our data suggest that genetic activation of BRF2 represents a unique mechanism of lung

squamous cell carcinoma tumorigenesis." They add, "It [BRF2] can serve as a marker of lung squamous cell carcinoma and may provide a novel target for therapy."

More information: Lockwood WW, Chari R, et al. (2010) Integrative Genomic Analyses Identify BRF2 as a Novel Lineage-Specific Oncogene in Lung Squamous Cell Carcinoma. PLoS Med 7(7): e1000315. [doi:10.1371/journal.pmed.1000315](https://doi.org/10.1371/journal.pmed.1000315)

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