Title: Prognostic and Predictive Gene Signature for Adjuvant Chemotherapy in Non-Small-Cell Lung Cancer Patients

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Technology: Diagnostics

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Summary: This invention is a prognostic gene signature for classifying lung cancer patients into poor survival group or good survival group. This signature includes a set of 18-hub genes specifically for early stage lung adenocarcinoma. Four of them are associated with poor prognosis while the other 14 are associated with good prognosis. This is the minimum set of genes to be tested without sacrificing the prediction performance. It has been validated against six independent patient data sets covering five widely used microarray gene expression platforms. Another functional 12-gene set is derived from 18-hub genes, through analysis of integrated genetic aberration, genome-wide RNAi functional data, and mRNA expression data. It determines patients' survival benefits from adjuvant chemotherapy. This 12-gene predictive signature has been validated in two independent non-small-cell lung cancer cohorts. Computational products are also developed for these gene signatures. This technology provides a powerful tool for the lung oncologist during the course of therapies.

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