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(54) **Title:** MOLECULAR DIAGNOSTIC TEST FOR LUNG CANCER

(57) **Abstract:** Methods and compositions are provided for the identification of a molecular diagnostic test for lung cancer. The test defines a novel DNA damage repair deficient molecular subtype and enables classification of a patient within this subtype. The present invention can be used to determine whether patients with NSCLC are clinically responsive or non-responsive to a therapeutic regimen prior to administration of any chemotherapy. This test may be used with different drugs that directly or indirectly affect DNA damage or repair, such as many of the standard cytotoxic chemotherapeutic drugs currently in use. In particular, the present invention is directed to the use of certain combinations of predictive markers, wherein the expression of the predictive markers correlates with responsiveness or non-responsiveness to a therapeutic regimen.

