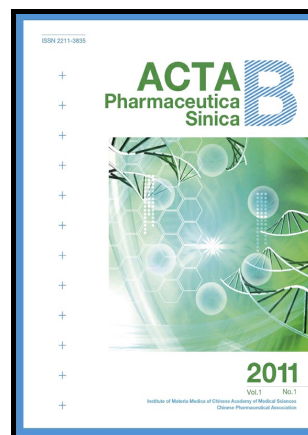


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Personalized medicine in non-small cell lung cancer: a review from a pharmacogenomics perspective

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Review**Personalized medicine in non-small cell lung cancer: a review from a pharmacogenomics perspective**

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Running title: Personalized medicine in non-small cell lung cancer

Abstract Non-small cell lung cancer is a prevalent and rapidly-expanding challenge to modern medicine. While generalized medicine with traditional chemotherapy yielded comparatively poor response rates and treatment results, the cornerstone of personalized medicine using genetic profiling to direct treatment has exalted the successes seen in the field and raised the standard for patient treatment in lung and other cancers. Here, we discuss the current state and advances in the field of personalized medicine for lung cancer, reviewing several of the mutation-targeting strategies that are approved for clinical use and how they are guided by patient genetic information. These classes include inhibitors of tyrosine kinase (TKI), anaplastic lymphoma kinase (ALK), and monoclonal antibodies. Selecting from these treatment plans and determining the optimal dosage requires in-depth genetic guidance with consideration towards not only the underlying target genes but also other factors such as individual metabolic capability and presence of resistance-conferring mutations both directly on the target gene and along its

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