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Meta-analysis of the relationship between *p21* Ser31Arg polymorphism and lung cancer susceptibility

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ABSTRACT. The cyclin-dependent kinase inhibitor 1A (also known as *p21*) is thought to be involved in tumor development by mediating cell cycle arrest through the inhibition of cyclin/CDK activity. To explore the relationship of Ser31Arg polymorphism in the *p21* gene with the risk of developing lung cancer, we performed an overall and stratified meta-analysis based on ethnicity, lung cancer subtypes and source of controls, with six eligible studies (2366 cases and 3320 controls). No significant variation in lung cancer risk was detected in any of the genetic models in the overall, and the ethnicity-based and cancer subtype-based subgroup analyses. However, in the subgroup analysis based on source of controls, significant opposite associations were observed; a significantly increased lung cancer risk was observed in the hospital-based control subgroup, while a significantly decreased lung cancer risk was detected in the mixed-source control and unknown-source

control subgroups. In summary, based on our meta-analysis, *p21* Ser31Arg polymorphism does not appear to act as an independent lung cancer risk factor and is more likely to act together with other genetic and non-genetic factors in the development of lung cancer; this needs further investigation.

Key words: *p21*; Ser31Arg; Polymorphism; Lung cancer risk; Meta-analysis

