



# Association between IL-21 polymorphism and systemic lupus erythematosus: a meta-analysis

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**ABSTRACT.** Several case-control studies have been conducted to investigate the association between Interleukin-21 (IL-21) polymorphisms and systemic lupus erythematosus (SLE) susceptibility, and most of the studies focused on *IL-21* rs907715 and rs2221903 polymorphisms. Given the inconsistent results from these studies, the present meta-analysis aimed to obtain a more precise estimate of the association between *IL-21* rs907715 and rs2221903 polymorphisms and SLE. Studies regarding these specific polymorphisms and SLE were retrieved from PubMed, Embase, Web of Science, CNKI, and CBM. Data were extracted and meta-analysis was performed using the STATA 12.0 software. For the *IL-21* rs907715 polymorphism, seven sets of comparisons involving 7977 SLE cases and 8097 healthy controls were considered. Results showed that there were significant differences in the *IL-21* rs907715 genotype distribution between SLE patients and

healthy controls in the comparisons of all genetic models. Upon stratified analysis by ethnicity, a similar result was found in the Caucasian and African-American population. For the *IL-21* rs2221903 polymorphism, seven sets of comparisons involving 7990 SLE cases and 8098 healthy controls were considered. Results showed that there were significant differences in the *IL-21* rs2221903 genotype distribution between SLE patients and healthy controls in the comparisons of GG versus AA and GG versus GA+AA. Upon stratified analysis by ethnicity, a similar result was found in the Caucasian population. This meta-analysis suggests that the both *IL-21* rs907715 and rs2221903 polymorphisms may be associated with SLE susceptibility. As current evidence remains limited, further studies are needed to warrant the association between *IL-21* rs907715 and rs2221903 polymorphisms and SLE susceptibility.

**Key words:** Interleukin 21; Polymorphism; Meta-analysis; Systemic lupus erythematosus