



Association of the *IL-4R* Q576R polymorphism and asthma in the Chinese Han population: A meta-analysis

Z.Y. Huang^{1*}, B.J. Cheng¹, G.J. Cai^{2*} and B.F. Zhang³

¹Department of Pediatrics, The No. 2 Hospital of Changzhou, Jiangsu, China

²Department of Cardiology, Wujin Hospital Affiliated to Jiangsu University, Changzhou, Jiangsu, China

³Department of Pathology and Molecular Medicine, McMaster University, Ontario, Canada

*These authors contributed equally to this study.

Corresponding author: B.J. Cheng

E-mail: chenbaojin982@126.com

Genet. Mol. Res. 14 (1): 2900-2911 (2015)

Received May 6, 2014

Accepted October 27, 2014

Published March 31, 2015

DOI <http://dx.doi.org/10.4238/2015.March.31.21>

ABSTRACT. The *IL-4R* Q576R polymorphism has been reported to increase susceptibility to asthma, but the results are controversial. Thus, we performed a meta-analysis to evaluate the association of the *IL-4R* Q576R polymorphism and asthma risk in the Chinese Han population. A total of sixteen eligible case-control studies that evaluated the relationship between the *IL-4R* Q576R polymorphism and asthma in the Chinese Han population were obtained by comprehensive literature search incorporating electronic databases, and included 2077 asthma cases and 1589 controls. Our analysis detected a significant association between the *IL-4R* Q576R polymorphism and the risk of asthma in the Chinese Han population (Allelic model: OR = 1.481, 95%CI = 1.134-1.935, P = 0.004; Dominant model: OR = 1.542, 95%CI = 1.194-1.990, P = 0.001; Recessive model: OR = 1.695, 95%CI = 1.170-2.456, P =

0.005, Additive model: OR = 1.897, 95%CI = 1.299-2.771, P = 0.005). The year of publication and size of total sample might be sources of between-study heterogeneity. Upon subgroup analysis by size of total sample of each study, the significant association only remained in a subgroup with a small sample size. In summary, our meta-analysis suggested that the *IL-4R* Q576R polymorphism is associated with asthma in the Chinese Han population.

Key words: Polymorphism; Single nucleotide polymorphism; Meta-analysis; Asthma