GMR Genetics and Molecular Research
Online Journal
ISSN:1676-5680

# Variations in *WNT3* gene are associated with incidence of non-syndromic cleft lip with or without cleft palate in a northeast Chinese population

**Y.P. Lu[1], W.T. Han[1], Q. Liu[2], J.X. Li[1], Z.J. Li[2], M. Jiang[1] and W. Xu[1]**

[1]Key Laboratory of Reproductive Health,
Liaoning Province Research Institute of Family Planning,
Key Laboratory of Reproductive Health and Medical Genetics,
National Health and Family Planning Commission, Shenyang, China
[2]Department of Oral Maxillofacial Surgery and Plastic Surgery,
School of Stomatology, China Medical University, Shenyang, China

Corresponding authors: W.T. Han / Q. Liu
E-mail: hwtzzf@sohu.com / liu66k@126.com

Genet. Mol. Res. 14 (4): 12646-12653 (2015)
Received May 9, 2015
Accepted August 18, 2015
Published October 19, 2015
DOI http://dx.doi.org/10.4238/2015.October.19.8

**ABSTRACT.** Non-syndromic cleft lip with or without cleft palate (NSCL/P) is a common birth defect. Several *WNT* genes are involved in craniofacial embryogenesis, and therefore may play an important role in the etiology of NSCL/P. Two SNPs (rs3809857 and rs9890413) in the *WNT3* gene were subjected to case-control and case-parent analysis by polymerase chain reaction-restriction fragment length polymorphism (PCR-RFLP) in 236 unrelated patients with NSCL/P, including 128 elementary families (185 mothers and 154 fathers), and 400 control individuals from northeast China. The rs3809857 SNP, under the assumption of a dominant model, was found to induce a 2-fold lower risk of NSCL/P $OR_{GG\ vs\ GT+TT}$ = 0.605, 95%CI = 0.436-0.839, P = 0.003). Moreover, the family-based association test revealed an under-

 

transmission for the minor allele T. On the other hand, we observed a significant association in the case-control and case-parent analysis of the SNP rs9890413. In addition, the P values for the haplotype of rs3809857-rs9890413 were observed to be statistically significant (P = 0.004). In conclusion, our study confirmed the association between the *WNT3* variant and NSCL/P in the population tested.

**Key words:** Cleft lip; Cleft palate; Family-based association test; *WNT3*

 