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Polymorphisms in 3'UTR of *FGF* genes contribute to non-syndromic oral cleft risk in a Chinese Han population

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Introduction: Non-syndromic oro-facial clefts (NSOC) are congenital defects with complex etiology. Single nucleotide polymorphisms (SNPs) in 3'UTR of candidate genes were considered to be associated with NSOC susceptibility by affecting binding ability of miRNA to the target mRNA. Fibroblast growth factors (*FGF*) and fibroblast growth factor receptors (*FGFR*) serve critical functions in orofacial development.

Aim: The aim of the present study is to explore associations between SNPs within 3'UTR of fibroblast growth factor (*FGF*) and their receptor (*FGFR*) genes and risk of NSOC.

Materials & Methods: 11 SNPs were selected and genotyped in a 602 cases /602 controls study. 3 of them (*FGF*2/rs1048201, P=0.026; *FGF*5 / rs3733336, P<0.001; *FGF*9 / rs546782, P=0.043) were proved to be associated with NSOC susceptibility. Their respective potentially binding micro RNAs were predicted by bio-informatic analysis and confirmed by luciferase activity assay *in vitro*, which was further confirmed by mRNA and protein expression *in vivo*.

Results & Conclusions: In conclusion, our findings indicated 3 SNPs in 3'UTR of *FGF* genes were associated with NSOC by a possible mechanism of modifying miRNA-mRNA interaction.

Biography

Lin Wang is currently the Vice-Principal of Nanjing Medical University and Head of Jiangsu Key Laboratory of Oral Diseases. He was assigned as the Visiting Scholar in Northwestern University and University of Illinois at Chicago during 1996-1998. He has been focusing on molecular biology of craniofacial growth and development for decades and successively in charge of four National Natural science foundation of China (NSFC). He has already published more than 50 peer-reviewed papers in reputed journals and serving as an Editorial Board Member of *Journal of oral rehabilitation.*

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