Association of melanocortin-4 receptor gene polymorphisms with obesity-related parameters in Malaysian Malays.

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Abstract

Background: Melanocortin-4 receptor (MC4R) is an important regulator of body weight and energy intake. Genetic polymorphisms of the MC4R gene have been found to be linked to obesity in many recent studies across the globe. Aim: This study aimed to examine the effects of MC4R polymorphisms on obesity parameters, Linkage disequilibrium (LD) pattern and haplotypes in Malaysian Malays. Methods: The study subjects were 652 Malaysian Malays. Genomic DNA was extracted from buccal swabs. Genotyping was performed using Sequenom MassARRAY® iPLEX platform. Anthropometric and blood lipid profiles were measured. Results: MC4R rs571312 SNP was associated with logBMI (p = 0.008) and systolic blood pressure (p = 0.005), while MC4R rs2229616 SNP was associated with total cholesterol (TC) levels (p = 0.016). The MC4R rs7227255 SNP did not show any association with obesity parameters. Conclusions: The strength of LD of the MC4R gene region is low and the haplotypes were not associated with obesity in Malaysian Malays.

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