

Comprehensive Association Analysis of 10 Single Nucleotide Polymorphisms Associated With Osteoporosis among a Taiwanese Population

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ABSTRACT In the present study, we tested for an association between single nucleotide polymorphisms (SNPs) and bone mineral density (BMD) of the hip and lumbar spine in a Taiwanese population by analyzing 252 healthy persons (non-osteoporosis) and 193 persons with osteoporosis. We found that age; body mass index; family history; and consumption of coffee or vitamin D were associated with osteoporosis in our Taiwanese population. Our results also indicated that osteoprotegerin (*OPG*) SNP (rs6993813 T→C) and receptor activator of nuclear factor kappa-B ligand (*RANKL*) SNP (rs9594738 C→T) were significantly associated with BMD in our Taiwanese population. Additionally, we propose that the mean threshold value of integration of 7 wild-type SNPs (rs7524102 and rs6696981 of 1p36, rs11898505 of 2p16, rs9479055 of 6q25, rs326340 and rs1289759 of 3q13, and rs9594738 of 13q14) can be used for both a Taiwanese reference for bone density testing and to achieve the effect of grading.