

# Association of the estrogen receptor $\alpha$ gene polymorphisms with osteoporosis in the Mexican population

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The estrogen receptor gene (ER $\alpha$ ) has been implicated in the development of osteoporosis. In this study, the association of two ER $\alpha$  gene polymorphic markers (a TA dinucleotide repeat and a single nucleotide polymorphism, G2014A) with osteoporosis was tested in 70 osteoporotic women, 70 non-osteoporotic women and 500 subjects from the Mexican population. According to the genetic analysis of the Mexican population using eight unlinked polymorphic markers, we found that our population is structured into three subpopulations; therefore, the allele-phenotype relationship was analyzed with a statistical method that considered population stratification. We found that the G2014A polymorphism is associated with the presence of osteoporosis while the TA dinucleotide repeat is not. The G allele and the GG genotype frequencies of the G2014A marker were significantly higher in osteoporotic than in non-osteoporotic women. Likewise, subjects bearing the G allele in heterozygous or homozygous displayed