

# PON1Q192R polymorphism is associated with lipid profile in Mexican men with Mayan ascendancy

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## Abstract

Paraoxonase (PON1) enzyme is associated with high-density lipoproteins (HDL) that prevents low-density lipoprotein (LDL) oxidation. PON1Q192R polymorphism is associated with a risk of coronary heart disease and low HDL levels in case-control studies, but the issue is yet unresolved. Mexico has shown an increase in cardiovascular diseases, and some genetic factors may play a role. Our purpose was to evaluate the association between PON1Q192R and L55M polymorphisms and serum lipid profile in a healthy Mexican population. Ninety unrelated male inhabitants from southeastern Mexico with Mayan ascendancy agreed to participate. Demographic characteristics, lifestyle and medical history were obtained by questionnaire. Lipid profile was determined by enzymatic methods, PON1 activity by using paraoxon and phenylacetate and PON1 genotype by real-time PCR. HDL-cholesterol (HDL-C) levels were associated with genotype: 192RR homozygote subjects had lower HDL-C levels than 192QQ homozygotes, and individuals with 192RR and 192QR genotypes had an odds ratio (OR) =7.05 (95% confidence interval (CI) =1.29-38.34) of having HDL-C<60 mg/dL. Individuals with higher paraoxonase activity (>600.18 U/L) had a slight risk (OR=4.9, 95% CI=0.83-22.02) of having HDL-C<60 mg/dL. PON155LM polymorphism was associated with higher LDL-cholesterol. PON1Q192R polymorphism showed a role in modulating lipid profile: 192RR homozygotes showed the least favorable lipoprotein levels.