



Association of the ACTN3 R577X polymorphism with power athlete status in Russians.

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Female

Gene Frequency

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Humans

Male

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Abstract: The alpha-actinin-3 (ACTN3) gene encodes a Z-disc structural protein which is found only in fast glycolytic muscle fibers. A common nonsense polymorphism in codon 577 of the ACTN3 gene (R577X) results in alpha-actinin-3 deficiency in XX homozygotes. Previous reports have shown a lower proportion of the ACTN3 XX genotype in power-oriented athletes compared to the general population. In the present study we tested whether XX genotype was under-represented in Russian power-oriented athletes. The study involved 486 Russian power-oriented athletes of regional or national competitive standard. ACTN3 genotype and allele frequencies were compared to 1,197 controls. The frequencies of the ACTN3 XX genotype (6.4 vs. 14.2%; P

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