

# ASSOCIATION BETWEEN MIR-27A RS895819 (A>G) POLYMORPHISM AND FEMALE INFERTILITY IN THE GREEK POPULATION.

**Despoina Mavrogianni**, Georgia Ntroubogianni, Sofoklis Stavros, Eirini Drakaki, Petros Drakakis.

*First Department of Obstetrics and Gynecology, School of Medicine, University of Athens, Athens, Greece,  
First Department of Obstetrics and Gynecology, School of Medicine, University of Athens, Athens, Greece,  
Third Department of Obstetrics and Gynecology, School of Medicine, University of Athens, Athens, Greece,  
First Department of Obstetrics and Gynecology, School of Medicine, University of Athens, Athens, Greece,  
Third Department of Obstetrics and Gynecology, School of Medicine, University of Athens, Athens, Greece.*

## **Abstract Body**

Female infertility is a global health problem, and the underlying molecular mechanisms are not clearly known. MicroRNAs (miRNAs) are known to interfere with many molecular mechanisms in cells and have been shown to play a significant role in female infertility through changes in their expressions, due to different Single Nucleotide Polymorphisms (SNPs) in their sequence.

The purpose of this work is the study of the association between miR-27a rs895819 (A>G) polymorphism and female infertility in the Greek population.

The sample population consisted of 73 which participated in an IVF program and did not have a previous successful pregnancy. A control group of 107 women who had at least one successful pregnancy was also included in the study. DNA was extracted from all samples, and Polymerase Chain Reaction (PCR) with SNP specific primers was applied. The 182 bp PCR product was treated with DraIII-HF restriction enzyme to detect the polymorphism. The IBM SPSS 20.0 Statistics Data Editor program was used for the statistical analysis of the results.

Our results imply a greater chance of pregnancy failure for the GG (CC) genotype ( $p < 0.001$ ) and greater chance of pregnancy success for the AA and AG genotypes ( $p < 0.001$ ). Moreover, the rs895819 polymorphism showed a statistically significant association with the level of prolactin hormone (PRL), especially when studying the comparison of GG-AG genotypes and AA-AG genotypes ( $p < 0.001$ ).

The results of the present research study seem to confirm the involvement of the rs895819 (mir-27a A>G) polymorphism in female infertility. These results may be included in a wider SNP panel related to infertility issues and consequently lead to more effective solutions for the achievement of pregnancy.