

Possible genetic factor for male infertility identified

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Virginia Commonwealth University School of Medicine researchers have discovered a gene involved with the production of sperm that may contribute to male infertility and lead to new approaches to male contraception.

One in six couples trying to conceive a baby is affected by infertility, according to the American Fertility Association - and in about half of these cases, a male factor is present. Sperm defects are often found to be the main cause or a contributing cause.

Sperm are produced in the testicles through a three-step process called spermatogenesis. During the final stage, known as spermiogenesis, a lot of changes take place, including the packaging of DNA into the sperm head and the formation of the sperm tail, which propels the [sperm cell](#) toward the egg.

In the study, published online in the Early Edition of the [Proceedings of the National Academy of Sciences](#) the week of Sept. 14, the team reported that male mice lacking a protein called meiosis expressed gene 1, or MEIG1, were sterile as a result of impaired spermiogenesis - the process that encompasses changes in the sperm head and the formation of the tail.

According to Jerome F. Strauss III, M.D., Ph.D., dean in the VCU School of Medicine, and Zhibing Zhang, M.D., Ph.D., assistant professor in the VCU Department of [Obstetrics](#) and [Gynecology](#), the team also found that MEIG1 associates with the Parkin co-regulated gene protein, or PACRG protein, and that testicular PACRG protein is reduced in MEIG1-deficient mice. PACRG is thought to play a key role in assembly of the sperm tail, and the reproductive phenotype of PACRG-deficient mice mirrors that of the MEIG1-mutant mice.

"We discovered that MEIG1 is essential for male

fertility. Moreover, our findings reveal a critical role for the MEIG1/PACRG partnership in the function of a structure that is unique to sperm, the manchette. The absence of a normal manchette in mice lacking MEIG1 totally disrupts the maturation process of [sperm](#)," said Strauss.

"In addition to having an impact on fertility, the discovery identifies a new target for drug discovery for a much needed reversible male method of contraception," he said.

Source: Virginia Commonwealth University ([news](#) : [web](#))

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