

New research may provide insight into reasons behind male infertility

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Virginia Commonwealth University School of Medicine researchers have identified a protein complex that is essential for formation of the sperm tail— findings that could lead to novel approaches to male contraception and clarify some of the unknown factors that contribute to male infertility.

One in six couples trying to conceive a baby is affected by infertility, according to the American Fertility Association. The U.S. Department of Health and Human Services reports that one-third of fertility problems are due to men.

The development of the sperm flagellum is a carefully orchestrated process that requires moving proteins to a specific location in a specific sequence.

"We have discovered a pathway by which the sperm tail is assembled through the interaction of proteins that direct construction material to the right place at the right time in a [sperm cell](#)," said senior author Zhibing Zhang, M.D., Ph.D., associate professor in the Department of Obstetrics and Gynecology, VCU School of Medicine. "These essential proteins are targets for the development of male contraceptives. They also provide molecular insight into [male infertility](#) caused by inability to form a functional sperm tail."

In 2009, Zhang's research team discovered that a protein, MEIG1, is essential for the production of sperm.

The present study, which was published in the research journal *Development* on Feb. 24, built upon the 2009 discovery, adding that MEIG1 and another protein, which is called the Parkin co-regulated gene protein, form a complex that builds the sperm tail by directing cargo to the sperm tail construction site. Without the tail, sperm cannot swim in the [female reproductive tract](#) to reach an ovulated egg.

Provided by Virginia Commonwealth University

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