

Gene knockout makes female mice masculine

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The mammalian fucose mutarotase enzyme is known to be involved in incorporating the sugar fucose into protein. Female mice that lack the fucose mutarotase (FucM) gene refuse to let males mount them, and will attempt copulation with other female mice. Researchers writing in BioMed Central's open access journal *BMC Genetics* created the FucM mouse mutants in order to investigate the role of this enzyme in vivo.

Chankyu Park worked with a team of researchers from the Korea Advanced Institute of Science and Technology and intriguingly gained some insight into the neurological basis of sexual preference.

He said, "The FucM [knockout mice](#) displayed drastically reduced sexual receptivity, although pregnancy after forced mating attempts by normal sexually experienced males showed that the animals were fertile. The FucM knock-out mice have reduced levels of alpha-fetoprotein, a protein thought to be involved in development of parts of the brain responsible for [reproductive behavior](#)".

The mutant female mice were healthy, and behaved normally towards young mice. When approached by male mice, however, they would not adopt the sexually receptive 'lordosis' position. Furthermore, they lost interest in investigating male urine, unlike normal females, and would attempt to mount other females. Speaking about the results, Park said, "We speculate that these behavioural changes are likely to be related to a neurodevelopmental change in pre-optic area of the female mutant brain, becoming similar to that of a normal male".

More information: Male-like sexual behavior of female mouse lacking fucose mutarotase, Dongkyu Park, Dongwook Choi, Junghoon Lee, Dae-sik Lim and Chankyu Park
BMC Genetics 2010, 11:62 [doi:10.1186/1471-2156-11-62](https://doi.org/10.1186/1471-2156-11-62).
www.biomedcentral.com/1471-2156/11/62/abstract

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