

Genetic tug of war determines gender

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U.S. scientists says whether a mammalian egg develops into a male or female is determined by a struggle between genes encoding signaling proteins.

The international study, led by Duke University Medical Center cell biologists, determined genes Wnt4 and Fgf9 are balanced during the early stages of development in the mammalian gonad before it commits to either a male testis or a female ovary. If that equilibrium is tipped in favor of Wnt4, the gonad develops into an ovary, while an Fgf9 victory leads to the formation of a testis.

What tips the balance in favor of male is a third gene, Sry, located on the Y chromosome in the genome and known to be the primary sex-determining gene in mammals, researchers said. When Sry becomes activated at a crucial moment during the early gonad's development, it favors Fgf9 and leads to testis development, said Blanche Capel, senior member of the international research team.

The study appears in the May 22 issue of the journal Public Library of Science-Biology.

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