

Fortunately for men, size doesn't matter (much)

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The Tammar Wallaby; manlier than man?

(PhysOrg.com) -- Researchers from The Australian National University have discovered that the male-specific Y-chromosome is shrinking - and it's happening at different rates across species.

The research team discovered that a marsupial's [Y-chromosome](#) is genetically denser than the human Y-chromosome, meaning that animals like the tammar wallaby are bounds ahead on the 'manliness' scale. However, even though the Y-chromosome is shrinking, in this case size doesn't matter.

The international study, led by Dr Paul Waters from the ANU Research School of Biology, analysed DNA samples from tammar wallabies and found more genes on the male chromosome than expected.

"There were lots of genes that we weren't expecting to find," said Dr Waters. "These genes have been lost from the Y-chromosome in

placental mammals like humans but, for some reason, they have been retained in marsupials.

"This means there are different rates of gene loss on the Y-chromosome across species."

The Y-chromosome is one of two sex chromosomes carried in males from most mammal species. It contains male-specific genes including the testis determining gene, which triggers male sexual development. Dr Waters said that researchers have known for some time that the Y-chromosome is losing genetic material.

"It's shrinking. It gets physically smaller as it loses genes," said Dr Waters. "The Y-chromosome can theoretically lose chunks at a time - 50 genes, 100 genes - depending on how big the deletion is.

"When these genes are lost, the function they played is lost altogether. But genes will only be lost from the Y-chromosome if they no longer have a function of importance for males. If they do have some sort of male-specific role, such as in sperm production, they will be retained."

Dr Waters added that despite the shrinking chromosome, there is no risk of men becoming extinct.

"Y-chromosomes have been completely lost in other species, such as in some rodents, and genes important for male development have moved somewhere else in the genome. The master switch that turns on male development can change and move around the genome, but the result will remain the same.

"Men will always be men, irrespective of the size of the Y-chromosome."

Provided by Australian National University

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