

## Origin of mammalian pregnancy revealed by genomic 'parasites'

An international team of scientists has identified large-scale genetic changes that marked the evolution of pregnancy in mammals.

They found thousands of genes that evolved to be expressed in the uterus in early mammals, including many that are important for maternal-fetal communication and suppression of the immune system. Surprisingly, these genes appear to have been recruited and repurposed from other tissue types by transposons—ancient mobile genetic elements sometimes thought of as genomic parasites.

The study, published online in Cell Reports on January 29, sheds light on how organisms evolve new morphological structures and functions.

“For the first time, we have a good understanding of how something completely novel evolves in nature, of how this new way of reproducing came to be,” said study author Vincent Lynch, assistant professor of human genetics at the University of Chicago. “Most remarkably, we found the genetic changes that likely underlie the evolution of pregnancy are linked to domesticated transposable elements that invaded the genome in early mammals. So I guess we owe the evolution of pregnancy to what are effectively genomic parasites.”

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