Mammoth genes could be used to create new species of ‘Arctic’ elephant

Unlike their elephant cousins, woolly mammoths were creatures of the cold, with long hairy coats, thick layers of fat and small ears that kept heat loss to a minimum. For the first time, scientists have comprehensively catalogued the hundreds of genetic mutations that gave rise to these differences.

The research reveals how woolly mammoths (*Mammuthus primigenius*) evolved from the ancestor they share with Asian elephants (*Elephas maximus*). It could even serve as a recipe for engineering elephants that are able to survive in Siberia.

The first woolly mammoth genome was published in 2008, but it contained too many errors to reliably distinguish how the mammoth genome differs from those of elephants. Other studies singled out individual mammoth genes for close inspection, identifying mutations that would have endowed the animals with light coats and oxygen-carrying haemoglobin proteins that work in the cold.

In the latest study, Vincent Lynch, an evolutionary geneticist at the University of Chicago in Illinois, and his team describe how they sequenced the genomes of three Asian elephants and two woolly mammoths (one died 20,000 years ago, another 60,000 years ago) to a very high quality. They found about 1.4 million DNA letters that differ between mammoths and elephants, which altered the sequence of more than 1,600 protein-coding genes.

The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion and analysis. Read full, original post: Mammoth genomes provide recipe for creating Arctic elephants