# Colossal Biosciences makes strides towards resurrecting the woolly mammoth



Scientists at Colossal Biosciences, a US biotechnology start-up, have made significant advancements in their mission to resurrect the woolly mammoth by creating a new genetically engineered species referred to as "woolly mice." This development, announced recently, represents a pivotal moment in their de-extinction efforts, with expectations of producing a woolly mammoth calf by the end of 2028 by modifying Asian elephants with mammoth traits.

Ben Lamm, co-founder and chief executive of Colossal, explained that the team has been rigorously studying the genomes of ancient mammoths in comparison to those of Asian elephants. This research has involved genome-editing techniques to modify the DNA of elephant cells, aiming to replicate the characteristics of the mammoth. The creation of the woolly mice serves as a validation of their methods, indicating that their techniques may one day contribute to their ultimate goal of bringing back the woolly mammoth. "It does not accelerate anything but it’s a massive validating point," Lamm stated, speaking to The Guardian.

The team utilised various genome editing strategies, conducting experiments on fertilised mouse eggs and embryonic mouse stem cells. By targeting nine specific genes related to hair characteristics, they produced mice with traits thought to be similar to those of their prehistoric relatives, including longer, thicker, and curly coats. Beth Shapiro, Colossal's chief science officer, noted that all the mice born from these edits were healthy and expressed some traits associated with cold tolerance.

However, the work has drawn both interest and scepticism from the scientific community. Experts have noted that while the creation of woolly mice is intriguing, it does not bring Colossal any closer to accurately replicating the physical and behavioural characteristics of the mammoth. Robin Lovell-Badge, head of stem cell biology at the Francis Crick Institute, expressed concerns about the feasibility of de-extincting mammoths due to the complex nature of their biology and the limited understanding of the mechanisms behind the observed gene modifications.

Colossal's CEO asserted that the woolly mice signify a breakthrough in their de-extinction mission, achieving complex genetic combinations that have evolved over millions of years. The company emphasised that their research goes beyond mere novelty, aiming to inform future conservation efforts and ecological restorations by studying adaptations in cold-climate mammals.

The company is also exploring artificial womb technologies that could aid in the protection and restoration of existing endangered species. Meanwhile, discussions surrounding the ethical implications and viability of restoring extinct species continue among experts. Dr Louise Johnson, an evolutionary biologist at the University of Reading, pointed out that while the project is fascinating, the notion of bringing back species from extinction could represent "false hope."

Colossal has recently raised $200 million in funding, which solidifies its valuation at approximately $10.2 billion. This funding round was led by TWG Global, backed by notable investors including Sir Peter Jackson, the Oscar-winning director famed for the "Lord of the Rings" series. The company's ambitious plans are being closely observed as they navigate both the scientific and ethical complexities of pushing the boundaries of genetic engineering in their quest to resurrect the ancient mammoth.

Source: [Noah Wire Services](https://www.noahwire.com)

## References

* <https://colossal.com/how-de-extinction-works/> - This URL supports the claim about Colossal Biosciences' efforts in de-extinction, specifically their work on the woolly mammoth project. It details the use of CRISPR for species de-extinction and ecosystem restoration.
* <https://colossal.com/mammoth/> - This URL provides further details on Colossal's woolly mammoth de-extinction project, highlighting their goal to create a cold-resistant elephant with mammoth traits. It also discusses the potential ecological benefits of reviving the mammoth steppe ecosystem.
* <https://www.noahwire.com> - This URL is the source of the original article, providing context for Colossal Biosciences' advancements in de-extinction efforts and their plans to genetically engineer a woolly mammoth-like species.
* <https://www.theguardian.com> - This URL could potentially host articles or interviews related to Colossal Biosciences' de-extinction efforts, including statements from Ben Lamm about their progress and validation through the creation of woolly mice.
* <https://www.franciscrickinstitute.org> - This URL is associated with the Francis Crick Institute, where Robin Lovell-Badge, a prominent stem cell biologist, has expressed concerns about the feasibility of de-extincting mammoths due to their complex biology.
* <https://www.reading.ac.uk> - This URL is related to the University of Reading, where Dr. Louise Johnson, an evolutionary biologist, has discussed the ethical implications and potential false hope associated with de-extinction projects like Colossal's.