

Price of mice to plummet under NIH's new scheme

The agency is set to provide knockout mice for just \$115 each.

Emily Waltz

For many scientists, mice are the animal models of choice because they are supposed to be cheap and easy to manipulate. But in recent years, neither has been particularly true, forcing scientists to shell out precious grant money for mice lacking certain genes.

The US National Institutes of Health (NIH) is embarking on an ambitious initiative to make the animals affordable. The agency hopes to build an inventory with about 25,000 mouse lines—although a few practical hurdles remain.

With an initial \$10 million, the NIH has already purchased 251 knockout mouse lines from Deltagen and Lexicon Genetics, the two primary suppliers. In exchange, the companies will curtail intellectual property rights and provide data on the physical characteristics of each mouse line. Depending on the response from the research community, the NIH may buy up to 2,500 more lines from the companies, says Chris Austin, director of the NIH Chemical Genomics Center.



Mighty mouse: Making a single line of knockout mice can take up to a year and cost \$100,000.

Stanton Short, The Jackson Laboratory

Researchers rely on knockout mice, which lack specific genes, to study disease and screen drugs. Of the nearly 25,000 genes in the mouse genome, about 10,000 have thus far been knocked out. Of those, about one-third of the mouse lines are owned by private companies or scattered among various academic and nonprofit labs. Three mouse banks partially funded by the NIH store most of the remaining lines.

“ The repositories will have to add capacity in order to take on this large amount of mice. ”

Chris Austin
National Institutes of Health

Making a new knockout line is not easy: it can take up to a year and cost up to \$100,000, notes Muriel Davisson, director of genetic resources at The Jackson Laboratory in Bar Harbor, Maine, one of the three NIH mouse banks.

Buying a mouse line from a company is no cheaper. For instance, California-based Deltagen charges \$26,200 for two pairs of live knockout mice. Additional embryos, sperm and embryonic stem cells can run up another \$15,000. Even then, the mice often come attached with intellectual property strings. Company employees sometimes co-author papers and some companies demand royalties on any discoveries or products.

The NIH mouse banks charge about \$115 per mouse and hold no licensing restrictions for academic researchers. The agency plans to move the purchased lines to mouse banks at the Jackson Laboratory, the University of California in Davis and the University of North Carolina. It will also build a catalog of mice made in academic labs and collaborate with other international programs, including one in the European Union, to avoid duplication, Austin says.

The mouse banks will store the majority of the mice as frozen embryos and thaw them as needed. But researchers often prefer live mice, says Austin, and cages take up a lot of space, leading to concerns about the banks' storage ability. "It's a very real problem," says Austin. "The repositories will have to add capacity in order to take on this large amount of mice."

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