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Monkey stem cells cloned

CAIRNS

Cloned embryonic stem cells have at last been generated from monkeys, a US research group claimed this week. The work was announced on 18 June in a last-minute presentation at the annual meeting of the International Society for Stem Cell Research in Cairns, Australia. These findings will renew hopes that similar cells can be produced for humans.

"We've been waiting for this for some time," said Alan Trounson of Monash University, Victoria, Australia, who introduced the presentation.

The work was carried out by Shoukhrat Mitalipov of the Oregon National Primate Research Center in Portland and colleagues. They removed the chromosomes from unfertilized monkey eggs and replaced them with nuclei from the skin cells of an adult rhesus monkey (*Macaca mulatta*). A total of 278 oocytes yielded 21 blastocysts (hollow early embryos), from which the team eventually derived two embryonic stemcell lines. The work has not yet been published.

The failure of earlier attempts to clone embryonic stem cells in this way using monkeys had led several experienced researchers in the field to suggest that characteristics specific to primates might make it impossible (C. Simerly, et al. Science 300, 297; 2003). "Now we know primates are possible, like other mammal species," says Norio Nakatsuji from Kyoto University, who has established primate stemcell lines from uncloned embryos.

One possibly crucial aspect of the new work is a gentler way of removing chromosomes from the egg by using imaging software rather than staining and ultraviolet light to guide the process.

José Cibelli, a cloning expert at the University of Michigan, Ann Arbor, says there is no clear reason why techniques to make human embryonic stem cells through nuclear transfer need be very different from those used in nonhuman primates. But he cautions that "what works in rhesus monkeys doesn't work in baboons."

The Oregon group's work has yet to be replicated in monkeys, but Renee Reijo Pera at Stanford University, California, plans to apply the techniques to other primates. He says that success in primates will renew the resolve to find similar techniques for humans.

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Torture of Iran's political prisoners is reportedly commonplace at Tehran's notorious Evin Prison.

conservatives, that threatens its grip.

And the United States has made no secret of the fact that it is spending millions to encourage some of the forms of dissent under attack, under the rubric of "pro-democracy support". Haghighatjoo, along with many academic and human-rights groups, sees this as both incomprehensible and counterproductive, playing into the hands of the regime by providing a pretext to attack independent pro-democracy groups and academic reformers.

"How can we as Americans spend millions of dollars to effectuate covert or overt actions against a sovereign government, and expect them to take that crap sitting down?" says Rahni. Esfandiari's husband, Shaul Bakhash, himself an academic expert on Iran, has also attacked the policy: "Loose talk of regime change and allocation of money supposed to advance democracy in Iran has done a great deal of harm to Iranian academics, intellectuals and researchers," he told the *Financial Times*. "It also feeds the paranoia of the Iranian regime of American intentions." **Declan Butler**

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