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Nuclear reprogramming in cloned cows

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Telomere length shortens upon culture of fibroblast cells *in vitro*. But what happens to chromosomal ends and telomerase activity when nuclei from these aged cells are used to clone animals by somatic nuclear transfer? In the January 30 Proceedings of the National Academy of Science Betts *et al*. report on telomeres and telomerase activity in early and late-passage donor fibroblasts and recipient cloned bovine embryos (*Proc Natl Acad Sci USA* 2001, **98:**1077-1082). Despite the reduction in telomere length in older bovine fibroblasts and ES-like cells, telomerase is reprogrammed in the early cloned blastocysts and telomere length is restored whatever the nuclei source. These results support earlier studies showing that bovine cloning rejuvenates old cells, in contrast to the telomere shortening that has been observed in cloned sheep.

References

1. Telomerase and mammalian ageing: a critical appraisal.

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3. *Proceedings of the National Academy of Science*, [http://www.pnas.org]

4. Extension of cell life-span and telomere length in animals cloned from senescent somatic cells.

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