

サルにおけるST法の成功



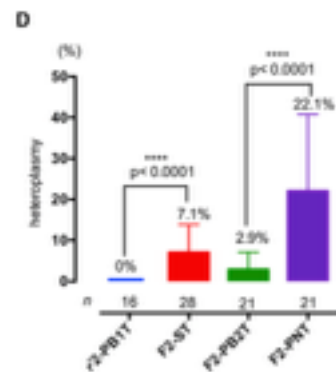
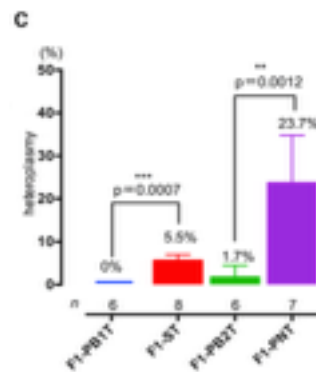
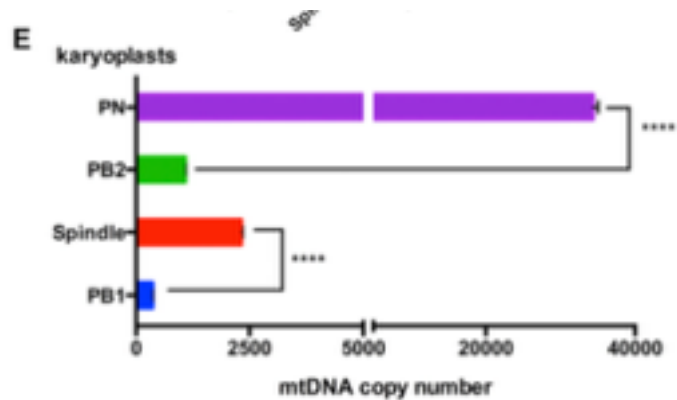
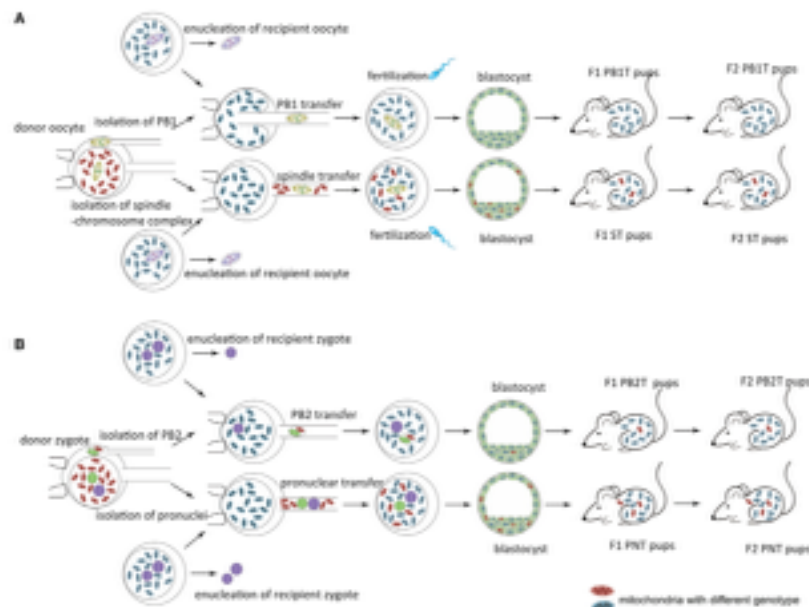
Figure 2 | Mito and Tracker, the first primates to be produced by spindle-chromosomal complex transfer (ST) into enucleated oocytes followed by fertilization and embryo transfer. Twin pregnancy was established by transfer of two ST-derived blastocysts into a recipient. Both infants are healthy and their growth and development is within a normal range for rhesus macaques. The photo was taken at 6 days of age.

サル核置換
個体まで発生

mtDNA heteroplasmy
胚性幹 (ES) 細胞 (2株) <3%
新生児 (2個体) <3%

Tachibana, Mitalipov et al., Nature 2009

マウスにおけるST法, PBT法の成功



Wang, et al., Cell 2015

ヒトでの研究報告

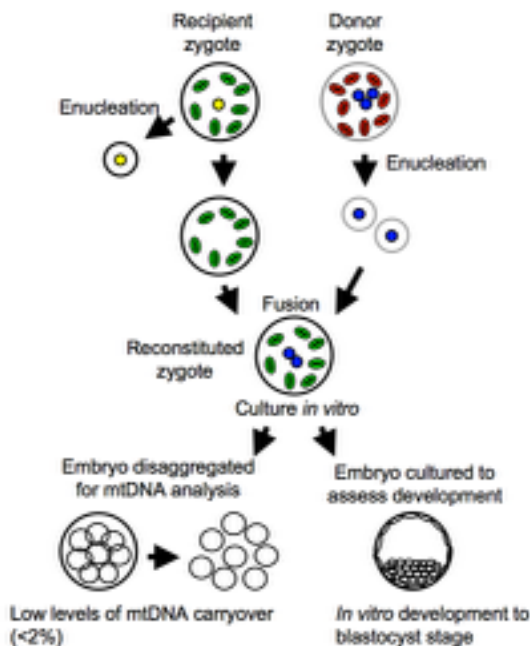
ヒトにおけるPNT法の成功

ミトコンドリア置換を目的としたヒト核置換

体外受精における破棄胚（異常受精），および研究目的で有償で提供された卵子を使用

PNT後の胚は胚盤胞に発生
（ES細胞は樹立していない）

mtDNA heteroplasmy
初期胚（9個の胚）
 $1.68 \pm 1.81\%$



Supplementary Figure 1. Schematic representation of pronuclear transfer in abnormally fertilised human embryos. The main findings are potential development to blastocyst stage *in vitro* and very low levels of donor mtDNA carry over (<2%)

Craven, Herbert et al., Nature 2010