

Focus	Improving the efficiency of sperm preservation technologies in rats
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Period	FY2010 - 2011
Overview	<p>The National BioResource Project – Rat (NBRP-Rat) is one of the core rat resource facilities in the world. In this project, sperm and embryos have been preserved to maintain rat resources, while present reports concern the establishment of rat ES and iPS cells. Moreover, mutant strains and knockout strains have also been produced using ethylnitrosourea (ENU) and zinc finger nucleases (ZFN) respectively. Research using these new rat strains and those maintained in NBRP-Rat will increase rapidly in the near future. For this reason, efficient technologies for 1) the cryopreservation of sperm that can be used for in-vitro fertilization and 2) freeze-dried sperm that can be preserved long term at room temperature should be established. This program targets improved rat sperm preservation methods via the collaboration of Kyoto University and Azabu University. The results of this program will facilitate the efficient production of offspring using cryopreserved sperm maintained at NBRP-Rat, and make the preservation and transportation of freeze-dried sperm safer and simpler without liquid nitrogen.</p>
Progress	<p>References</p> <ul style="list-style-type: none"> • Kaneko T, Serikawa T (2012) Successful Long-Term Preservation of Rat Sperm by Freeze-Drying. <i>PLoS ONE</i> 7(4): e35043, doi: 10.1371/journal.pone.0035043. • Takehito Kaneko, Tadao Serikawa, Long-term preservation of freeze-dried mouse spermatozoa, <i>Cryobiology</i>, Available online 3 February 2012, doi: 10.1016/j.cryobiol.2012.01.010. <p>Rat in vitro fertilization protocol using cryopreserved sperm (Azabu University)</p> <ul style="list-style-type: none"> • http://www.azabu-u.ac.jp/topics/pdf/130516.pdf