TGF-β signal transduction is poorly understood. Eight different Smads have been in mammals; there are primarily three kinds of Smad protein as receptor-Smad (R-Smad), common partner Smad (Co-Smad) and inhibitory Smad (I-Smad). Each of them was controlled differentially through TGF-β family.

The purpose of our study is to detect Smads and TGF-β receptors mRNA in the preimplantation mouse embryos and uterus using RT-PCR.

Smad famiy and TGF-β receptors generally increased in uterus on day 4 pregnant, and especially TGF-β R-II mRNA was greatly increased. While Smad 1, 2 and 5 mRNA highly was expressed in unfertilized oocytes, PN and blastocyst stage embryos, Smad 3 just detected in unfertilized oocytes and PN stage embryos. In particular, Smad 7 diversely was expressed in the preimplantation mouse embryo.

Therefore, we suggest that Smad family may act differential modulator of signal transduction of TGF-β family in the preimplantation mouse embryos and uterus.

For further study, we are to be planing localization of Smad proteins in preimplantaion mouse embryos and uterus.

P-3 Improved Post-thawed Preimplantation Development after Vitrfication using Taxol™, a Cytoskeleton Stabilizer

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Objectives: Selection of oocyte cryopreservation method is a prerequisite factor for developing an effective bank system. Compared with slow freezing method, the vitrification has various advantages such as avoiding intracellular ice crystal formation. We previously reported that mouse mature oocytes can survive and develop to the blastocyst stage after vitrfication and thawing using ethylene glycol (EG) and an electron microscope (EM) grid. However, a high incidence of spindle and chromosome abnormalities was detected in thawed oocytes after vitrification. We examined whether the addition of a cytoskeleton stabilizer, Taxol™, to the vitrification solution could promote the post-thawed survival and subsequent development of stored oocytes.

Materials and Methods: Cumulus-enclosed oocytes (CEOs) were collected from ICR mice superovulated by PMSG and hCG injections. CEOs were pre-equilibrated in Dulbecco,s phophate buffered saline (DPBS) with 1.5 M EG with and without 1 μM Taxol™. Oocytes were vitrified with 5.5 M EG and 1 M sucrose containing DPBS with or without 1 μM Taxol™. CEOs were then loaded onto EM grid for storing in liquid nitrogen. Stored oocytes were thawed by a five-step method. Vitrified-thawed oocytes were then fertilized in vitro with epididymal semen and cultured in a chemically defined, modified preimplantation-1 medium up to 124h after IVF. Some blastocysts were transferred to synchronized recipients.

Results: More oocytes developed to the 4-cell (44.7% vs. 69.7%), 8-cell (31.8% vs. 64.2%), morula (24.7% vs. 54.3%), and blastocyst (20.3% vs. 49.2%) stages after the addition of Taxol™ to the cryopro-

tectant than after no addition. However, Taxol™ treatment did not significantly affect post-thaw survival and fertilizability. 26 and 21 mouse pups were born after transfer of blastocyst derived from oocytes vitrified with and without Taxol™.

Conclusions: The addition of Taxol™ to vitrification solution greatly promoted post-thaw preimplantation development of ICR mouse oocytes.

P-4 사람의 X, Y 염색체 특이 DNA Probe 개발과 이를 이용한 Fluorescence *in situ* Hybridization (FISH)의 임상적 적용

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목 적: 본 연구는 사람의 X와 Y 염색체 특이 DNA probe를 합성하고, 이를 이용하여 여러 종류의 세포에 대한 FISH를 수행함으로써 합성된 probe의 신뢰성 검증과 그 적용 가능성을 제시하고자 하였다.

대상 및 방법: Probe 제작은 사람의 X와 Y 염색체에 존재하는 각각의 염색체 특이적 반복 염기서열 중 약 400-bp DNA 단편을 대상으로 하였고, 대상 염기에 대해 적합한 primers를 제작하여 polymerase chain reaction (PCR) 및 dideoxy chain-termination 방법으로 sequencing하여 이의 존재를 확인하였다. FISH probe는 digoxigenin labeled dUTP를 이용한 PCR 방법으로 제작하였다. 합성된 probe의 신뢰성을 확인하기 위해 사람의 혈액과 양수세포, 융모막 세포 및 정자를 대상으로 FISH를 수행하였다.

결 과: 합성된 probe로 FISH를 한 결과 Y-specific probe는 Yq12 위치에 접합하였고, X-specific probe는 동원체 부위에 probe의 접합을 관찰할 수 있었다. 또한 혈액과 양수세포, 융모막 세포 및 정자에 FISH를 수행하여 X와 Y 염색체의 존재 유무를 확인할 수 있었다.

결 론: 제작된 X와 Y-specific probe는 각각의 염색체에 대해 그 특이성이 확인되었고, 본 probe를 이용한 FISH 방법은 사람의 거의 모든 세포에서 X, Y 염색체 탐지에 유용하게 이용될 수 있을 것으로 사료된다.

P-5 Influence of Antiphospholipid Antibodies on IVF-ET Outcome

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Objectives: The present study was designed to investigate if antiphospholipid antibodies (aPL) could affect the pregnancy outcome in women undergoing in vitro fertilization and embryo transfer (IVF-ET).

Materials and Methods: From January 1997 to June 2001, 9 women with aPL who underwent IVF-ET