

mouse embryos.

**Materials and Methods:** Two cell embryos were recovered from ICR female mice (3~4 weeks) at 46~50 hrs after hCG 5 IU injection (mated just after hCG injection) and cultured in 50  $\mu$ m DMEM droplets supplemented with nothing (control: n=46), glucose 0.5mM (Group A; n=46) or glucose 3.15 mM (Group B; n=46) under mineral oil. All experimental media were supplemented with 20% human follicular fluid.

**Results:** Total blastocyst formation rates was lower (NS) in glucose groups (group A: 52.2%; B: 47.8%) than control group (60.9%). ZiB rates was the highest ( $p<0.05$ ) in control (47.8%) than those in group A (21.7%) and B (28.3%). ZeB rates were the highest (NS) in group A (30.4%) than those in control (13.0%) and group B (19.6%). Blastocysts, cultured in group B (50.5), had the highest (NS) mean cell number compared with the others (control: 39.2; group A: (45.6). The ICM proportion (%ICM of total cells) in blastocysts cultured in group A (20.6%) was the highest (NS) than those of other tested groups (control: 15.2; group B: 13.9%).

**Conclusion:** This study shows that a low dose (0.5 mM) of glucose added to culture medium increases the developmental capacity of 2 cell embryos in mice.

**Key Words:** Mouse 2 cell embryo, Glucose, Blastulation, Cell number, ICM proportion

## P-36 Isolation of Novel Deubiquitinating Enzymes in Human Chorionic Villi

JM Shin, SK Lim<sup>2</sup>, KJ Yoo<sup>1</sup>, SH Lee<sup>2</sup>, KH Baek<sup>1,2</sup>

*Graduate School of Life Science and Biotechnology<sup>1</sup>, College of Medicine,  
Pochon CHA University, Infertility Medical Center<sup>2</sup>*

**Background & Objectives:** To isolate and characterize of novel human deubiquitinating enzymes in human chorionic villi.

**Method:** To identify novel deubiquitinating enzymes in human chorionic villi, we generated five degenerate PCR primers based on the conserved sequences for catalytic domains (Cys, two Asp and two His) of deubiquitinating enzymes. Expression pattern were confirmed by RT-PCR and Northern blotting. Ub-b-gal assay was performed in E. coli to confirm in vitro functional assay.

**Results:** We obtained multiple bands from various cell lines and tissues by RT-PCR using degenerate PCR primers. Sequence analysis revealed that some of unknown genes contained conserved domains which are necessary for deubiquitinating activity and high homology with putative human DUBs. By using NCBI BLAST algorithm information, we isolated a novel human DUB enzyme in chorionic villi, and named vDUB3. The full-length vDUB3 cDNA has 1,593 bp and encodes a 530 amino acid polypeptide with the molecular weight of approximately 58 kDa. This enzyme also contains the highly conserved catalytic domains and biochemical assay revealed that vDUB3 has deubiquitinating activity in vitro.

**Conclusions:** Taken all together, we propose that vDUB3 is a novel human DUB enzyme. And, we con-

firmed that vDUB3 is expressed ubiquitously in human tissues by northern blot analysis. Also, vDUB is expressed in embryonic carcinoma and embryonic stem cell, indicating that substrates of vDUBs may play an important role during human embryonic development.

## P-37 Relationship between CYP17 and CYP11 $\alpha$ , and PCOS in Korean Population

MS Kim, SK Lim<sup>1,3</sup>, SH Lee<sup>2</sup>, KH Baek<sup>1,3</sup>

*Cell and Gene Therapy Research Institute<sup>1</sup>, Infertility Medical Center<sup>2</sup>,  
Pochon CHA University<sup>3</sup>, CHA General Hospital*

**Objectives:** Polycystic ovary syndrome (PCOS) is one of the most common endocrine disorders in women of reproductive age. However, the polycystic ovary gene or genes have not yet been identified. Since genes encoding enzymes involved in the testosterone synthesis and in the cholesterol side-chain cleavage are implicated in PCOS, we have analyzed the polymorphisms in the promoter of CYP17 gene for the frequency of T to C substitution and in the promoter of CYP11 $\alpha$  gene for the (ttta)<sub>n</sub> repeat to determine whether they are associated with PCOS in Korean women of reproductive age.

**Materials and Methods:** Using restriction fragment length polymorphism (RFLP) and microsatellite polymorphism by variable number tandem repeat (VNTR), the polymorphisms were analyzed in 30 Korean PCOS women patients and in 26 control patients.

**Results:** The allele frequency of the genotype A2A2 for CYP17 was 4 times higher than the one in Greek population with PCOS (33% vs. 8%). In addition, the genotype analysis of PCOS patients for the CYP11 $\alpha$  (ttta)<sub>n</sub> repeat polymorphism revealed 77% 216+ and 23% 216- genotypes, respectively. This is similar to the study performed with British and Greek populations.

**Conclusions:** The difference of the allele frequencies between Korean and other populations for CYP17 and CYP11 $\alpha$  suggests that the role of polymorphism may be due to various ethnical background in PCOS patients.

## P-38 일주기성 유전자의 난소내 발현에 관한 연구

포천 중문외과대학교 차병원 여성의학연구소

최윤정 · 정미경 · 이숙환 · 차수경 · 박이석 · 김낙근  
고정재 · 이동률 · 윤태기 · 정형민

**Background & Objectives:** 최근 일주기성 리듬의 조절에 중요한 역할을 하는 유전자들의 존재와 기능이 뇌의 시교차 상핵 등에서 밝혀지기 시작하였으며, 이들 유전자의 발현은 생체내의 다양한 조직과 기관에서도 중요하게 작용하고 있는 것으로 생각되나, 난소를 포함한 생식기관에 관한 연구는 매