## D-43 Effects of Glucose and IGF-I on Glucose Transporter Gene Expression during Development of Preimplantation Mouse Embryos

전한식*, 김종월, 전일경, 한성원, 계명찬[1], 김문규
한양대학교 자연과학대학 생물학과, [1]경기대학교 자연과학대학 생물학과

A sodium-independent facilitative glucose transporter (GLUT) is a major route, by which glucose may be transported across membranes in mouse early embryo. Recently IGF-I, one of the growth factors engaged in preimplantation mouse embryo development, was known to promote glucose transport into the mouse embryo. The present experiment has been carried out to exame the effect of glucose and IGF-I on embryonic development and GLUT expression. Two-cell embryo developed to blastocyst regardless of the presence of glucose and IGF-I. But the number of blastomeres in mid-blastula was significantly increased by IGF-I. Depletion of glucose enhanced GLUT1 expression in morula cultured from 2-cell embryo. IGF-I potentiated GLUT1 expression in morula cultured from 2-cell embryo even in the absence of glucose. In conclusion, depletion of glucose promotes GLUT1 expression in morula cultured from 2-cell embryo, and potentiation of GLUT1 expression is the important feature of the embryotropic effect of IGF-I leading to increase in glucose uptake.

## D-44 Analysis of Mitochondrial DNA Deletion in Human Cancers

김진선, 김민정, 이익수, 정구선, 김은경, 최영숙, 이교영†, 송은숙
숙명여자대학교 생물학과, †카톨릭대학교 의과대학 임상병리학 교실

The cancer cells continue to grow and divide without restraint, eventually spreading throughout the body, interfering with the function of normal tissues and organs, and progressively leading to death. At the cellular level, the development of a malignant neoplasm is commonly viewed as a multistep process ; initiation, promotion, and progression.

Tumor initiation is the primary step for tumor developing and the target of this step is DNA. According to the increase of aerobic glycolysis and the slow progression to cancer, the target of the tumor initiation can be on mitochondrial DNA(mtDNA) as well as nuclear DNA.

We examined the mtDNA mutation, especially the deletion, in stomach and lung cancer using PCR method. We detected the multiple deletions from stomach and lung cancer. It was suggested that the mtDNA deletion pattern is cancer-specific.