

3. 繁殖・生殖工学

データ閲覧・コメント入力可能期間：2021年3月28日0時～4月3日24時（予定）

[P3-22]Effect of zona pellucida on early development and gene expression in mouse embryos

○Weihong Fan¹、Hanako Bai¹、Manabu Kawahara¹、Masashi Takahashi² (1.Graduate School of Agriculture, Hokkaido University., 2.Graduate School of Global Food Resources, Hokkaido University.)

[Introduction]Zona pellucida (ZP) plays important roles in fertilization and early embryonic development. It is well known that zona-free (ZF) zygotes can develop to the blastocyst despite the loss of blastomere allocation. However, little is known about the role of ZP on early development and gene expression. We investigated the effect of ZP on the development and gene expression of mouse embryos.[Methods]After IVF and the culture of zygotes, 2-cell was used for this study. (1) ZF embryos were cultured in microdroplets and a handmade WOW system. (2) The development of zona intact (ZI) and ZF embryos were evaluated. (3) Gene expression in morula and blastocyst was evaluated.[Results](1) WOW system significantly improved the development of ZF than microdroplets. (2) Total cell number was significantly decreased in ZF than ZI. (3) ICM-specific genes were significantly increased in the ZF, whereas TE-expressed genes were significantly decreased in the ZF. However, *Hand1* was significantly increased in the ZF.[Discussion]These results suggest that ZP removal affects early development by disturbing the differentiation-related gene expression.