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Expression of Cyclin B1 mRNA and Protein after Activation in Enucleated Mouse Oocytes

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Further development of reconstructed embryos may be dependent upon the synchronization of donor nucleus and recipient cytoplasm at cell fusion, To control the synchronization of donor and recipient cells, the enucleated MII arrested oocytes are artificially stimulated prior to embryo reconstruction. Destruction of cyclin B results in the exit of cells from M-phase of cell cycle. This study was designed to investigate the effects of single or combined stimulation affected cyclin B1 mRNA and protein levels in mouse oocytes.

The oocyte activation was induced by 7% ethanol or 10μg/mℓ Ca-ionophore without (single) or with (combined) 10μg/mℓ cycloheximide. Competitive quantitative PCR for cyclin B1 mRNA and western blot analysis for cyclin B1 protein was preformed in mouse oocytes.

Cyclin B1 mRNA level was significantly reduced in single ($P<0.05$) and combined ($P<0.05$) stimulation groups. However, this level did not change in non-activated group and increased in intact group. Cyclin B1 protein level was also significantly reduced in both single ($P<0.05$) and combined ($P<0.05$) stimulation groups.

In conclusion, single and combined stimulation induces the degradation of cyclin B1 mRNA and protein after activation in enucleated mouse oocytes.

Key Words) ***oocyte activation, cyclin B1, degradation***