embryonic development by indirect immunofluorescence. The results obtained in these experiments were summarized as follows; Group culture (5 embryos/ 25 $\mu\ell$) showed more improved development rate to blastocyst than singly culture. This inferior development of singly cultured 2-cell embryos improved by the addition of EGF. Especially, 2-cell embryos cultured singly in 10 ng/ml of EGF (62.4%) indicated significant difference in development to blastocyst compared with contol group (47.9%). Also, cell number of ICM and TE by differential labelling showed the increased pattern in the EGF treatment group. The stimulating effect of EGF with the development level was significantly increased after 4-cell stage ($p<0.05$). ICM proportion also showed the increased pattern with the developmental level in the EGF treatment group. In addition, expression of EGF-R by indirect immunofluorescence detected after 4-cell stage. Therefore, EGF could stimulate preimplantation mouse embryo development by binding with expressed EGF-R after 4-cell stage and produce the more increased ICM and TE cell number of blastocyst.

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Toxicity of Bovine Oviductal Fluid(BOF) on the Development of Mouse Embryos *In Vitro*

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To investigate the role of oviductal environment during early mammalian development, we examined the effects of bovine oviductal fluid(BOF) on the development of mouse 2-cell embryos *in vitro*. All of embryos cultured in medium containing 5% or more of BOF underwent degeneratation after 48 hr, whereas 60% of embryos cultured in the absence of BOF developed to morulae. When BOF was heated at 65℃ for 30 min and then added to the culture medium, the embryotoxic effect of BOF was not removed at all. However, heating of BOF at 90℃ for 30 min resulted in partial loss of the embryotoxicity. When BOF heated at 65℃ for 30 min was further treated with 0.1% chymotrypsin for 1 hr or overnight and then added to the culture medium, 66% and 82%, respectively, of mouse 2-cell embryos developed to blastulae after 72 hr culture. None of embryos cultured with untreated BOF developed but degenerated. The addition of an anti- oxidant, including glutathione(GSH), to the culture medium removed the embryotoxic effect of BOF so that 85% of embryos developed to morulae in the presence of 10 mM of GSH after 48 hr culture. From these results, it is suggested that bovine oviductal fluid contains a protein-like factor(s) which becomes embryotoxic in exposure to the air, probably via oxidation reaction.

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Bovine Oviductal Fluid Do Not Support the Outgrowth of Mouse Blasotcyst *In Vitro*.

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Except several primates including human, tubal implantation has not been reported to occur in mammals. By using an *in vitro* model system wherein the trophoblast cells of mouse embryos attach to and outgrow on tissue culture plates precoated with FBS, the ability of bovine oviductal fluid to support the outgrowth of