

P-28 Expression of matrix metalloproteinases of mouse reproductive organs during estrous cycle

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Protein expression patterns of matrix metalloproteinases (MMPs) were examined in mouse reproductive organs during estrous cycle. Estrous cycles were classified into diestrus, proestrus, estrus or metestrus and MMP expressions were analyzed by zymography using gelatin as a substrate. Total protein content of uterine fluid (UF) was the largest at estrus and the least at diestrus. In contrast, overall MMP activities of UF was the highest at diestrus and the lowest at estrus. UF examined at all stages exhibited 4 MMPs including 106kDa, 64kDa, 62kDa and 59kDa and some minor bands. Of these, the gelatinase activities of 64kDa and 62kDa MMPs were higher in UF collected at diestrus but dramatically decreased at estrus. Ovarian tissue homogenate revealed many MMPs of which 4 MMPs were similar to the MMPs of UF. However, the relative activities of them did not correspond to the UF MMPs. Others were 140kDa, 89kDa, 45kDa and 42kDa MMP. These MMPs did not show distinct changes regardless of the estrous cycle. Similarly, oviductal tissue homogenate also exhibited 4 MMPs as those of UF MMPs and their patterns were also similar to the UF MMPs. An inhibitor of MMP, 1,10-phenanthroline, or a metal chelator, EDTA, abolished the appearance of MMP activity in gelatin gel whereas a serine protease inhibitor, phenylmethylsulfonyl fluoride failed to inhibit the appearance of MMP activities.

From these results, it is concluded that the protein expression of MMPs of mouse reproductive organs, particularly uterus, is regulated during estrous cycle suggesting to play a role in cyclic reproductive events of these organs.

P-29 Developmental Capacity of Bovine Follicular Oocytes after Ultra-Rapid Freezing by Electron Microscope Grid

I. Cryopreservation of Bovine Immature Oocytes

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Bovine immature oocytes were frozen ultra-rapidly using cryoprotectant solution consisting of 30% ethylene glycol, 0.5M sucrose, 18% Ficoll and 10% FBS added D-PBS (EFS30). For freezing, the electron microscope copper grid was used as a physical support to achieve very high