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KEY WORD : PORCINE OVIDUCTAL EPITHELIAL CELLS/CUMULUS OOCYTE  
COMPLEXES/ESTROUS CYCLE/SECRETORY PROTEINS

WANNA METTASART : CELLS AND PROTEIN SECRETION FROM PORCINE  
OVIDUCT AND OVARY IN ESTROUS CYCLE. THESIS ADVISOR : ASST. PROF. MAYUVA  
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Morphological investigation of ampulla and isthmic epithelial cells in estrous porcine at follicular and luteal phases revealed that they composed of simple columnar ciliated cells (about 7 to 10  $\mu\text{m}$  in diameter) and round shaped non-ciliated (secretory) cells (about 4 to 5  $\mu\text{m}$  in diameter). From the total of 110 ovaries of pigs at the age more than 210 days old, the ratio of cumulus-oocyte complexes (COCs) in follicular phase to luteal phase were found at 557:323. These COCs can be further classified into 5 types; intact-, multi-, partial-, and expanded-cumulus cell layers. After culturing of intact and multi cumulus cell layers (COCs types I and II) in M199 supplemented with 10% heat treated fetal calf serum (HTFCS), LH, FSH, and estrogen, and incubated at 37°C, 5%CO<sub>2</sub>, high humidity for 24 to 48 h, the ultrastructure of cumulus cells was changed in that they separated from the ovaries. It was indicated that mature oocytes developed from COCs types I and II can be prepared by the cell culture media reported in this study.

Ampulla and isthmic epithelial cells from oviducts and cumulus cells (CC) and granulosa cells (GC) from follicles cultured in M199 supplemented with 10% HTFCS and incubated at 37°C with 5% CO<sub>2</sub> and high humidity for 48, 96, and 144 h. before performing SDS-PAGE were detected the protein secretion. The results showed that secretion protein band was not observed from any type of cultured cells. Utilization of LC/MS/MS technique for identifying selected proteins from secretory fluids of ampulla epithelial cells in follicular phase found that the >220 kDa and 240 kDa protein was probably trypsin or protease. For the secretory fluids of ampulla epithelial cells in luteal phase, the protein sized 95 kDa was found to be a 90kDa heat shock protein while the protein sized about 105 kDa may be glycogen phosphorylase, protein kinase, or oviductal glycoprotein. The proteins from secretory fluids of CC+GC in follicular phase at sized about 27 kDa, 45 kDa, 140 kDa, and > 220 kDa were found to be immunoglobulin, haptoglobin, complement component 3, apolipoprotein A-IV, ceruloplasmin, hemopexin and fibronectin respectively whereas the protein secretion of CC+GC in luteal phase at size of >220 kDa was alpha-2-macroglobulin.

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