

## **Functions of the Follicle Cells during Oogenesis and Oocyte Degeneration of the Scallop, *Patinopecten yessoensis* on the East Coast of Korea**

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Ultrastructural changes occurring during the course of development and degeneration in oocytes of *Patinopecten yessoensis* are described for clams collected from Gomso Bay, Korea. The acini are surrounded by a matrix of vesicular connective tissue (VCT cells) including large quantity of glycogen particles. They likely serve as a means of transporting nutrients to the oocytes during the vitellogenic period. It is suggested that the VCT cells are probably the main source of nutrients for vitellogenesis. During early stages of oogenesis, the early vitellogenic oocytes are surrounded by several follicle cells. Contact between the early vitellogenic oocyte and the follicle cells is maintained by means of desmosome-like gap junctions. As differentiation of the oocyte proceeds, oocytes enter the middle stages of vitellogenesis and become stalk-shaped and project into the acinus lumen. As the vitellogenic oocyte development proceeds, the follicle cells are restricted to the stalk region which attaches the oocyte to the acinar wall. During late stages of vitellogenesis the endoplasmic reticulum and mitochondria are involved in the formation of proteinaceous yolk granules in the cytoplasm in the late vitellogenic oocyte. On the whole, vitellogenesis occurs through a process of autosynthesis, involving the combined activity of the Golgi complex, mitochondria and rough endoplasmic reticulum, and heterosynthesis in which extraovarian precursors (in the pinocytotic vesicles) are incorporated into oocytes by endocytosis, involving the basal region of the early vitello-

genic oocytes. The follicle cells appear to play an integral role in vitellogenesis. It is suggested follicle cells may be involved in the formation of the vitelline envelop and appear to have lysosomal system for break down during oocyte degeneration, but these cells probably are not the major source of yolk precursors.