D103 Gametogenesis and Reproductive Cycle of the Rock Shell, *Reishia (Thais) clavigera* (Neogastropoda: Muricidae)

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Gonadal development, gametogenesis, reproductive cycle, and first sexual maturity of *R. clavigera* collected at the rocky intertidal zone of Taehang, Puan-gun, Chollabuk-do, Korea, were investigated monthly through cytological and histological observations from July 1998 to June 1999. *Reishia clavigera* had separate sexes and was an internal fertilizer. The male penis was located near the two tentacles. The ovary and testis were composed of a great number of oogenic lobules and spermatogenic tubules, respectively. The size of ripe oocyte ranged 130~140㎛ in diameter. The peripheral cytoplasm of the germinal vesicle of the ripe oocyte in many cases were surrounded with smaller yolk granules, while the eccentric cytoplasm was occupied with larger ones. The reproductive cycle of *R. clavigera* could be classified into five successive stages: early active, late active, ripe, spawning, and recovery. Spawning of most females occurred from early July to August above 24.8℃ in seawater temperature. Spawning of males occurred from early June to August above 22.8℃ in seawater temperature. Minimum size for sexual maturity of both sexes was above 10.0 mm in shell height. Each of the egg capsule was a cylinder or spindle in shape, 4~6 mm in length and 1~2 mm in width. Just spawned egg capsules showed yellowish white or pale yellow, those with veliger larvae showed pale black, and released larvae or dead egg capsules showed black violet in color. The fecundity in an egg capsule ranged 70 to 91 eggs (mean, 80.28 eggs).

D104 Organ Induction by Combined dose of Activin A and IGF-II in *Xenopus* Presumptive ectoderm

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The induction of head sensory organs from Xenopus presumptive ectoderm was studied and the combination effect of activin A and IGF-II(Insulin-like Growth Factor-II). The concentration ranges of growth factors were activin A 0-50ng/ml and IGF-II 0-500 ng/ml. Explants were cultured in the combined solution for 3 days to normal embryos arrive at st. 43. The differentiated organs were most various at the concentration of activin A 1ng/ml and IGF-II 1ng/ml. Eyes were developed at the combined concentrations of activin A 1 and 10ng/ml, and IGF-II, 1-100ng/ml. Otic vesicles were developed in high percentage at activin A 1ng/ml and IGF-II, 1-500ng/ml solution. The immunohistochemistry was performed with monoclonal antibodies 25F5 and 40A11 for eye. The fine structures of induced eye and normal eye were compared. The expression of opsin and muscle actin were detected by RT-PCR.