

Enzyme-Linked Immunosorbent Assay (ELISA) Used in Quantification of Reproductive Output in the Purple Clam *Saxidomus purpuratus* in Korea

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Relatively few studies have been conducted on quantitative assessment of reproductive output in most marine bivalves due to technical difficulties involved in the measurement. Most studies use histology or artificial spawning for estimating quantity of the gonad mass although these methods are not quite successful in the quantification. As an alternative, we have developed an immune-probe for quantitative evaluation of egg mass of the purple clam, *Saxidomus purpuratus*. Rabbit anti-clam IgG was raised from a New Zealand white rabbit by inoculating purified fully mature eggs of the clam (95 ng dry weight with 55 μm in diameter) over 5 weeks. The antibody showed a strong sensitivity and specificity to the egg proteins after removing cross-reactivity presented in the antiserum by an immunoabsorption method. Gonad-somatic index (GSI, mg egg/mg tissue in dry weight) measured by ELISA varied from 0.22 to 0.31 among the clams collected in May 2002, which corresponds to 22 to 37 million eggs per clam (mean shell length and tissue wet weight of the clams were 85 mm and 43 gram, respectively). Since *S. purpuratus* is one of the most important shellfish in Korean fisheries industry, the method developed in this study can be successfully applied in study of the clam reproduction as well as the brood stock management.