

Variations des activités digestives en fonction des facteurs du milieu chez les crustacés



Proteolytic enzymes of hepatopancreas of six species of peneids (*Penaeus kerathurus*, *P. japonicus*, *P. monodon*, *P. stylirostris*, *P. merguensis* and *P. vannamei*) have been studied. Some of their physiological variations have been characterised. Increase in acclimation temperature of crustaceans enhances increase of specific activities of proteases. Variations of salinity does not modify specific activities, nor quantities of trypsin, nor electrophoretic patterns of these different proteases., Proteolytic enzymes of hepatopancreas of six species of Peneids (*Penaeus kevathurus*, *P. japonicus*, *P. monodon*, *P. stylirostris*, *P. merguensis* and *P. vannamei*) have been studied. Some of their physiological variations have been characterised. In *P. kerathurus* hepatopancreas, trypsin, chymotrypsin, leucine-aminopeptidase and carboxypeptidase A and B exist, as well as collagenase and a low molecular weight protease. Their physico-chemical and catalytic properties of these enzymes are close to those described in other zoological groups. Main proteases are characterized in the six species by different electrophoretic patterns. Immuno-electrophoretic and radioimmunologic measurements have been used to measure trypsin variations in *P. japonicus* hepatopancreas during

their biological cycles, During larval development, activities and trypsin quantities are maximum during zoea stage. Evolution of proteases activities during the growth does not show any discontinuity. During moult cycle, activities of digestive proteases and quantities of trypsin show maximal values at D~D- stages. Increase in acclimation temperature of crustacean enhance increase of specific activities of proteases related to kinetic parameters variations in the case of trypsin, and to quantitative changes of isoenzymes in the case of leucine aminopeptidase. Variations of salinity does not modify specific activities, nor quantities of trypsin, nor electrophoretic patterns of these different proteases. In *Palaemon serratus*, purification of α -amylase by affinity chromatography have been completed; this amylase have no reaction with bacteria and pork α -amylases, and weak reaction with *Astacus*, *Homarus* and *Cancer* α -amylases. In *P. serratus* hepatopancreas, α -amylase is located in secretory, absorption and fibrillar cells, and also in hemocytes. Enzymatic activities are linked to secretion of some hormonal factors. In summer, during moult cycle, isoenzyme level of amylase increases. From total eyes talk or from sinus gland, three hyperglycémie fractions have been differentiated by electrophoresis, having molecularweight near 20,000, 8,000 and 2,500 daltons. 278 In *Homarus gammarus*, digestive enzymatic activities are not the same when they are fed with different compound diets. For a food containing 35 % proteins, maximal values are measured for digestive amylase and proteases, for hepatopancreas DNA, RNA and for total protein content of animal.

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