DIGESTIVE PROTEASES FROM SOUTHERN SHRIMP (*Farfantepenaeus subtilis*)

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Studies about characterization of digestive proteases are important to understand the digestive physiology of species with potential for aquaculture. The purpose of this research was to indentify and characterize some proteases from hepatopancreas of southern shrimp *Farfantepenaeus subtilis* in different life stages. There are no significant differences on proteolytic activities between both life stages using azocasein, Leu-p-Nan and aminoacyl of ß-naphthylamide as substrates ($p \geq 0.05$). Trypsin-like activity was slightly higher in adults than juvenile extracts ($p < 0.05$). The highest activity among ß-naphthylamide substrates was found using alanine, arginine, leucine and lysine-ß-naphthylamide. Proteolytic activity of juveniles and adults was strongly inhibited by TLCK and benzamidine. By SDS-PAGE analysis, both juveniles and adults presented six bands ranging from 15.3 to 42.2kDa. The thermal stability zymogram showed a similar proteolytic band pattern between juveniles and adults, except that juveniles shrimps presented one proteolytic band at 65ºC and an extra proteolytic band. All the bands were inhibited by PMSF in both life stages. TLCK and benzamidine showed a strong inhibition of the bands. Only two bands identified as chymotrypsin were not inhibited by these inhibitors. Further studies would help the investigation about enzymes to elucidate the relation between digestion and nutritional requirements in *F. subtilis*.

Keywords: Aminopeptidases; *Farfantepenaeus subtilis*; Proteases; Southern shrimp; Trypsin.

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