Total proteolytic activity of intestinal proteases from Brazilian cobia
(Rachycentron canadum)

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Cobia (Rachycentron canadum), is a carnivorous pelagic fish living in tropical and subtropical waters and has been considered an excellent candidate to leverage Brazilian marine psiculture. This species has an efficient enzymatic arsenal present in their digestive tract with proteolytic enzymes with a great potential to be used in biotechnological process. The aim of this work was partially characterize the physical-chemical parameters of intestinal proteases from Brazilian cobia. The assays were carried out using 1% w/v azocasein as substrate. The influence of pH (5.0-11.5), temperature (25-75°C), inhibitors, SDS-PAGE and zymograms was also studied. Optimum pH and temperature were 11.5 and 55°C, respectively. The enzyme showed to be thermostable when incubated at 40°C for 30 min. It was also inhibited by the following inhibitors: TLCK (50.87%), PMSF (40.90%), benzamidine (39.84%) and TPCK (31.72%). Despite of the majority of digestive proteases are present in the pyloric caeca of this species, the intestine also proved to be a rich source of proteolytic enzymes with attractive properties for biotechnological application. These results may contribute to reduce the disposal of the viscera that generate environmental and ecological problems.

Keywords: Cobia, Rachycentron canadum, marine Brazilian psiculture, intestinal proteases, biotechnological process.
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