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Identification of indigestible peptides in enzyme hydrolysate of mackerel meat with hepatoprotective activity

肝臓保護作用を有するサバ「鯖」の酵素加水分解物における、難消化性ペプチドの特定

Kenji Sato and Akikka Ejima

京都大学大学院
農学研究科 応用生物学専攻
海洋生物機能学分野
佐藤 健司 教授



Animal experiments have demonstrated that an enzyme hydrolysate of mackerel meat exerts hepatoprotective activity. Objective of the present study was to identify the peptides response for the hepatoprotective activity. Mackerel meat was digested with proteases from *Bacillus subtilis* and *Aspergillus oryzae*. The hydrolysate was further digested with pancreatin and leucine aminopeptidase. The indigestible peptides in the peptidase digest were fractionated by size exclusion chromatography (SEC). Peptides in SEC Fr. were derivatized with 6-aminoquinolyl-N-hydroxysuccinimidyl carbamate (AccQ). Pyroglutamyl peptides were obtained by passing strong cation exchange column. The AccQ peptides and pyroglutamyl peptides were subjected to reversed phase HPLC-MS/MS. Main constituents in the peptidase digest were short chain pyroglutamyl peptides such as (pEL, pEE, pEV, pEI, pEA, pEQ, etc.) and prolyl (P)/hydroxyprolyl (O) peptides (GP, LO, PO, etc). As it has been demonstrated that pEL and pEI exert hepatoprotective activity, these peptides contributed to the hepatoprotective activity of the mackerel digest.