



## Partially purified insulin production from Tuna pancreas from canning processing plant waste

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This work was an insight into the characteristic of proper partially purified Insulin process to serve feasibility of waste utilization of Tuna pancreas from canning tuna processing to increase its value-added for insulin processing for human insulin or aquaculture application in further research. The topic and the results showed that a yield of Tuna pancreas was 2.75 % (w/w) of the whole viscera organs (liver, stomach, spleen, reproductive organ and pancreas). Sodium dodecyl sulfate polyacrylamide gel electrophoresis (SDS-PAGE) 15 % of separating gel was the best condition to identify type and molecular weight of the protein. The proper condition to purified insulin by using Sep-pak C-18 was obtained by using acetonitrile/water/trifluoroacetic acid (70.0/29.9/0.1, v/v/v) as mobile phase. Standard insulin was used for test this technique. The eluted insulin (6 kDa on SDS-PAGE 15%) was corresponded to insulin standard before separation by Sep-pak C-18. This showed an effective technique for the purification. In variation of Tuna pancreas mass, using at least 52 g were the optimum mass of raw material for the best purification process using Sep-pak C-18 technique and identified by SDS-PAGE. These seemed to show high value added insulin possibility extraction from the waste was obtained.

**Keywords:** Insulin; Tuna pancreases; Waste utilization