POTENSI HIDROLISAT PROTEIN DAGING KELINCI SEBAGAI *ANGIOTENSIN CONVERTING ENZYME INHIBITOR*

INTISARI

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Penelitian ini bertujuan untuk mengetahui hasil hidrolisis protein daging kelinci dengan enzim *pepsin, trypsin,* dan *pancreatin*, nilai IC_{50} setelah dihidrolisis dan mengetahui potensi hidrolisatnya sebagai *angiotensin converting enzyme* inhibitor (antihipertensi). Penelitian dilakukan dalam 2 tahap, tahap pertama adalah hidrolisis daging kelinci dengan enzim *pepsin, trypsin,* dan *pancreatin*, tahap kedua adalah pengujian penghambatan *angiotensin converting enzyme*. Variabel yang diamati pada tahap pertama meliputi protein terlarut, konfirmasi dengan SDS-PAGE, dan aktivitas enzim *pancreatin*, sedangkan variabel yang diamati pada tahap kedua adalah IC_{50}. Hasil penelitian menunjukkan bahwa perbedaan enzim berpengaruh nyata terhadap konsentrasi protein terlarut daging kelinci ($P<0,05$). Konsentrasi protein terlarut sebelum hidrolisis adalah 7,04 mg/mL setelah proses hidrolisis dengan enzim *pepsin, trypsin,* dan *pancreatin* meningkat berturut-turut 9,41, 7,65, dan 9,75 mg/mL. Aktivitas spesifik *pancreatin* 1363,87 U/mg sehingga menghasilkan protein terlarut yang tinggi. Konfirmasi berat molekul protein dengan SDS-PAGE setelah hidrolisis dengan *pepsin* 10 sampai 43 kDa, *trypsin* 17 sampai 43 kDa, dan *pancreatin* 10 sampai 43 kDa. Aktivitas penghambatan *angiotensin converting enzyme* oleh *pepsin* 40,69%, *trypsin* 65,45% dan *pancreatin* 47,83%. Proses hidrolisis dengan enzim *pepsin, trypsin,* dan *pancreatin* meningkatkan konsentrasi protein terlarut serta peptida yang lebih sederhana. Hidrolisat yang dihasilkan dari proses hidrolisis enzim *pepsin, trypsin,* dan *pancreatin* berpotensi sebagai *angiotensin converting enzyme* inhibitor. Aktivitas penghambatan *angiotensin converting enzyme* tertinggi yaitu hidrolisat dari enzim *trypsin* 65,45% dengan nilai IC_{50} 170 µg/mL.

Kata kunci: *angiotensin converting enzyme* ,*pepsin, trypsin* dan *pancreatin* hidrolisat, protein daging kelinci

THE POTENTIAL OF RABBIT MEAT PROTEIN HYDROLYSATE AS *ANGIOTENSIN CONVERTING ENZYME INHIBITOR*

ABSTRACT

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The aim of this research was to investigate the potential of rabbit meat hydrolysate by pepsin, trypsin, and pancreatin enzyme, furthermore, IC_{50} value after hydrolyzed and its potential as angiotensin converting enzyme inhibitor (antihypertensive) was also observed. The study was conducted in 2 stages.The first stage was the hydrolysis of rabbit meat by pepsin, trypsin, and pancreatin enzyme.The result of the first stage was then used for the second stage which was angiotensin converting enzyme inhibition test. The observed variables in the first stage included water soluble concentration, SDS-PAGE confirmation, and pancreatin enzyme activity, while IC_{50} was observed in the second stage. The results showed that the difference of enzyme had significant effect on water soluble protein concentration of rabbit meat ($P<0.05$). Water soluble protein concentration before hydrolysis was 7.04 mg/mL, while pepsin, trypsin and pancreatin hydrolysis which resulted in higher concentration which were 9.41, 7.65, and 9.75 mg/mL respectively. Specific pancreatin activity was 1363.87 U/mg, resulting in high dissolved protein. SDS-PAGE confirmation showed the protein molecular weight of rabbit meat after hydrolysis pepsin 10 to 43 kDa, trypsin 17 to 43 kDa, and pancreatin 10 to 43 kDa. Activity of angiotensin converting enzyme inhibitor by pepsin 40.69%, trypsin 65.45% and pancreatin 47.83%. The hydrolysis process with pepsin, trypsin, and pancreatin enzymes increased the concentration of water soluble proteins and simple peptides. Hydrolysate resulting from the hydrolysis of pepsin, trypsin, and pancreatin enzymes had the potential to be angiotensin converting enzyme inhibitors. The highest angiotensin converting enzyme inhibitory activity is hydrolyzate from trypsin 65.45% with170 µg/mL IC_{50} value.

Keywords: *angiotensin converting enzyme*, *pepsin, trypsin*, and *pancreatin*, hydrolyzate, rabbit meat protein.