

## **HIDROLISIS PROTEIN HATI ITIK TURI DAN PENGGING DENGAN ENZIM PEPSIN DAN POTENSINYA SEBAGAI ANGIOTENSIN CONVERTING ENZYME INHIBITOR**

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### **INTISARI**

Penelitian ini bertujuan untuk mengidentifikasi adanya potensi hidrolisat protein hati itik sebagai *Angiotensin Converting Enzyme* (ACE) inhibitor dari itik Turi dan Pengging. Materi yang digunakan dalam penelitian ini adalah hati itik Turi dan Pengging dihidrolisis menggunakan enzim pepsin. Data yang diuji meliputi kadar protein sebelum dan setelah dihidrolisis, profil protein melalui SDS-PAGE, dan uji penghambatan terhadap ACE (*Angiotensin Converting Enzyme*). Analisis data untuk uji profil protein melalui SDS PAGE dan uji penghambatan ACE dilakukan secara deskriptif. Data kadar protein terlarut sebelum dan setelah hidrolisis dianalisis dengan T-test. Hasil uji konsentrasi protein terlarut hati itik Turi  $1,26 \pm 0,17$  mg/ml, setelah hidrolisis meningkat  $1,77 \pm 0,07$  mg/ml. Kadar protein terlarut hati itik Pengging  $1,45 \pm 0,26$  mg/ml, setelah hidrolisis meningkat  $1,73 \pm 0,03$  mg/ml. Berat molekul protein hati itik Turi sebelum hidrolisis 23,82 sampai 67,3 kDa, setelah hidrolisis 11,59 sampai 36,73 kDa. Berat molekul hati itik Pengging sebelum hidrolisis 12,94 sampai 68,23 kDa, setelah hidrolisis 7,72 sampai 35,89 kDa. Rata-rata nilai  $IC_{50}$  hidrolisat protein hati itik Turi 55  $\mu$ g/ml dan hati itik Pengging sebesar 105  $\mu$ g/ml. Berdasarkan hasil penelitian, hidrolisat protein hati itik Turi dan Pengging memiliki potensi sebagai ACE inhibitor.

Kata Kunci: Protein hati itik, hidrolisis, pepsin, ACE inhibitor

## **THE HYDROLYSIS OF TURI AND PENGGING LIVER PROTEIN WITH PEPSIN ENZYME AND THE POTENCY AS ANGIOTENSIN CONVERTING ENZYME INHIBITOR**

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### **ABSTRACT**

This research aims to identify potency hydrolyzate protein of liver Turi and Pengging duck as *Angiotensin Converting Enzyme* (ACE) inhibitor. The material used were liver duck of Turi and Pengging which hydrolyzed by using pepsin enzyme. The variable observed were dissolved protein before and after hidrolisis, the profile protein by SDS-PAGE, ACE ihibition. Profile protein and ACE inhibition activity used were analized descriptively analysis, while the protein concentration before and after hydrolysis were analized by T-test. Dissolved protein concentration Turi duck liver was  $1.26 \pm 0.17$  mg/ml increase  $1.77 \pm 0.07$  mg/ml. Dissolved protein concentration Pengging duck liver was  $1.45 \pm 0.26$  mg/ml increase  $1.73 \pm 0.03$  mg/ml. The hydrolysis process affected on the molecular weight of Turi and Pengging liver protein. The molecular weight of Turi duck liver protein around 23.82 to 67.3 kDa decrease into 11.59 to 36.73 kDa, while the molecular weight of Pengging duck liver protein was 12.94 to 68.23 kDa decrease into 7.72 to 35.89 kDa. The average  $IC_{50}$  hidrolyzate protein from Turi duck liver was 55  $\mu$ g/ml and Pengging duck liver 105  $\mu$ g/ml. This conclusion of this research, protein hydrolyzate from Turi and Pengging duck liver have ACE inhibition potency.

Keywords: Duck liver protein, hydrolysis, Pepsin, ACE inhibition    potency