



INTISARI

AKTIVITAS ANTIBAKTERI DAN ANTIOKSIDAN HIDROLISAT PROTEIN GONAD LELE BETINA

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Penelitian ini bertujuan untuk mengetahui ekstrak protein terlarut, aktivitas antibakteri dan antioksidan dari hidrolisat protein gonad lele betina secara enzimatis. Sampel gonad betina dipreparasi dengan dihomogenkan dengan buffer fosfat dengan perbandingan 1:6. Kemudian disentrifuge 12.000 rpm, 4°C selama 15 menit. Cairan dan pelet dipisahkan, kemudian dilakukan pretisipasi amonium sulfat 20%, 40%, 60%, dan 80%. Masing-masing presipitat didialisis selama 12 jam sebelum dihidrolisis. Presipitat dan dialisat diuji kandungan protein terlarut dan hidrolisat protein diuji antibakteri dengan difusi dan uji antioksidan dengan DPPH. Total protein terlarut presipitat dan dialisat fraksi 20%, 40%, 60%, dan 80% yaitu 4078,93 mg/ml; 6.835,92 mg/ml; 13.033,82 mg/ml; 8.070,85 mg/ml dan 2.315,81 mg/ml; 1.787,14 mg/ml; 2.271,93 mg/ml; 9.853,06 mg/ml; 6.263 mg/ml. Hasil uji antibakteri hidrolisat papain untuk *E. coli* sebesar 0,64 mm; 2,21 mm; 3,23 mm; 4,80 mm; dan 3,26 mm. *Bacillus cereus* sebesar 0,64 mm; 2,21 mm; 3,23 mm; 4,80 mm; dan 3,26 mm. Hasil uji antibakteri hidrolisat pepsin untuk *E. coli* sebesar 1,23 mm; 1,70 mm; 0 mm; 1,89 mm dan 1,31 mm. *Bacillus cereus* sebesar 1,06 mm; 0 mm; 0,95 mm; 3,08 mm; dan 0 mm. Uji antioksidan tidak menunjukkan adanya aktivitas antioksidan dan sampel hidrolisat protein berperan sebagai oksidator dengan nilai inhibisi negatif.

Kata kunci : antibakteri, antioksidan, dialisis, hidrolisat, total protein.



ABSTRACT

ANTIBACTERIAL AND ANTIOXIDANT ACTIVITY OF PROTEIN HIDROLYSATE FROM CATFISH'S FEMALE GONAD

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This research aimed to find out the extraction of dissolved protein, antibacterial and antioxidant activities from protein hydrolysate of catfish's female gonad through enzymatic process. Female fish gonad is prepared by mixing with buffer phosphate using 1:6 scale. Then, being centrifuged in 12.000 rpm, in 4°C for 15 minutes. The liquid and solid compound are separated. After that dealing with ammonium sulphate precipitation for 20%, 40%, 60%, and 80%. Every single result of precipitation is processed on dialysis for 12 hours continuously before being hydrolyzed. The finding of precipitation and dialysis are examined on their dissolved protein. Protein hydrolysates examined on its antibacteria using disc diffusion test and antioxidant activity using DPPH. Through this process the researcher could find the total of extraction of dissolved protein from precipitation and dialysis fraction for 20%, 40%, 60%, and 80% are 4078,93 mg/ml; 6.835,92 mg/ml; 13.033,82 mg/ml; 8.070,85 mg/ml and 2.315,81 mg/ml; 1.787,14 mg/ml; 2.271,93 mg/ml; 9.853,06 mg/ml; 6.263 mg/ml. The antibacterial examination using papain enzyme hydrolysis for *E. coli* found 0,64 mm; 2,21 mm; 3,23 mm; 4,80 mm; and 3,26 mm. For *Bacillus cereus* found 0,64 mm; 2,21 mm; 3,23 mm; 4,80 mm; and 3,26 mm. The antibacterial examination using pepsin enzyme hydrolysis for *E. coli* found 1,23 mm; 1,70 mm; 0 mm; 1,89 mm and 1,31 mm. For *Bacillus cereus* found 1,06 mm; 0 mm; 0,95 mm; 3,08 mm; dan 0 mm. The antioxidant examination did not show the presence of antioxidant activity and the protein hydrolysates are known as the oxidator compound following the result of negative inhibition.

Keyword: antibacteria, antioxidant, dialysis, dissolved protein, hydrolyzate.