

Isolasi dan Karakterisasi Protease Ekstraseluler dari Bakteri dalam Limbah Cair Tahu

Title	Isolasi dan Karakterisasi Protease Ekstraseluler dari Bakteri dalam Limbah Cair Tahu
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Abstract	<p>Protease has been used in large application industrial process such as detergent, leather, textil, softdrink, and medicine. In order to find unique protease, many substances were explored as proteases of bacteria sources. In this study, tofu liquid waste was used as a source of bacteria producing proteases. Waste sample was grown in skim milk agar medium showing proteases activity, it was used to produce extracellular protease. The microbial colonies were identified as <i>Staphylococcus</i> sp. Protease was extracted with 5000 g centrifugation at 4 °C, and purified with ammonium sulphate precipitation continued with dialysis. Optimum production time, pH, metal ion, EDTA, specific activity, KM, and Vmaks were studied for enzyme characterization. Volume of crude enzyme was 300ml, with specific activity of 3.55 U/mg. Protease obtained from 60% ammonium sulphate fraction had the highest specific activity of 68.22 U/mg. Study on the protease characterization revealed that optimum temperature of this enzyme was 40°C. The optimum pH of the enzyme was found to be 8.0. The kinetic parameters KM dan Vmaks with casein as substrate were 0.31% and 51.55 U/ml. Some inhibitory effect was observed in the presence of EDTA, Cu⁺², Co⁺², Zn⁺², and enzyme activity was stimulated by Mg⁺², indicating that this ion had a functional role in the molecular structure of the enzyme.</p>
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