

Abstract

A 48-kDa protease (AMP48) was isolated and purified from crude latex of *Artocarpus heterophyllus* (jackfruit) by acid precipitation and ion exchange chromatography. Enzyme activity of AMP48 was strongly inhibited by phenylmethanesulfonyl fluoride and soybean trypsin inhibitor, indicating that the enzyme was a plant serine protease. The N-terminal amino acid sequences (A-Q-E-G-G-K-D-D-D-G-G) of AMP48 had no sequence similarity matches with any sequence databases of BLAST search and other plant serine protease. The secondary structure of this enzyme was composed of high α -helix (51%) and low β -sheet (9%). AMP48 had fibrinogenolytic activity with maximal activity between 55 and 60 °C at pH 8. The enzyme efficiently hydrolyzed α followed by partially hydrolyzed β and γ subunits of human fibrinogen. In addition, the fibrinolytic activity was observed through the degradation products by SDS-PAGE and monitoring the alteration of secondary structure of fibrin clot after enzyme digestion using ATR-FTIR spectroscopy.