Fibrinolytic Activities and Effects of Gamma-Irradiated on Seeds from *Coix lacryma-jobi* L., *Carthamus tinctorius* L. and *Malva verticillata* L.

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Abstract

The fibrinolytic activities of soluble proteins extracted from seeds of *Coix lacryma-jobi* L., *Carthamus tinctorius* L. and *Malva verticillata* L. were studied. Fibrinolytic activity of extract from *C. lacryma-jobi* L. showed 1.3 times higher than plasmin used as positive control. The fibrinolytic enzyme was confirmed and extracted directly from seed of *C. lacryma-jobi* L. by a fibrin zymography. The protein was composed of a single polypeptide and its apparent molecular weight was found to be 7.8 kDa, as judged by SDS-polyacrylamide gel electrophoresis. The effect of temperature for the proteolytic enzyme activity were stabilized above 50℃ and then dramatically decreased. Also, the enzyme activity was clearly inhibited by APMSF, PMSF and TPCK, suggesting that it is a member of the chemotrypsin-like serine protease. In addition, effects of gamma-irradiated on seed of each plants were revealed that 8Gy and 64Gy were higher than others. This result shown that gamma-irradiation of seeds were capable to increase the fibrinolytic activity. All these results suggest the protease is a fibrinolytic enzyme belong to a family of chemotrypsin-like serine protease.

References

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