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• 中文摘要

以發芽的台農 57 號甘藷塊根（已去除芽）純化水解其塊根儲藏性蛋白質—胰蛋白酶抑制因子的蛋白酶。市售的 pepstatin-agarose (crosslinked, 6%) 作爲親和性管柱層析膠體純化蛋白酶。在 gelatin-SDS-PAGE 活性染色膠體結果顯示，此蛋白酶受到 pepstatin 抑制，但不受 E-64 的抑制。推測此蛋白酶是屬於天冬胺酸型，其分子量大約是 64 kDa 。使用胰蛋白酶抑制因子的活性染色膠體的結果來顯示胰蛋白酶抑制因子水解情形，結果顯示，有沒有 5 mM DTT 存在下，此天冬胺酸型蛋白酶都可以水解胰蛋白酶抑制因子，有 5 mM DTT 存在下，此天冬胺酸型蛋白酶幾乎可以完全水解胰蛋白酶抑制因子。此一天冬胺酸型蛋白酶水解胰蛋白酶抑制因子的生理意義將在文中討論。

• 英文摘要

Roots of sprouted sweet potato (Ipomoea batatas [L.] Lam) were used as materials to purify proteases which degraded trypsin inhibitors (TIs), the root storage proteins of sweet potato (SP). The commercial pepstatin-agarose (crosslinked, 6%) was chosen as an affinity column for purifications. The purified protease has a molecular mass of about 64 kDa on the gelatin-SDS-PAGE gel and was inhibited by pepstatin but not by E-64 on the gelatin-SDS-PAGE gel. Therefore it might belong to the aspartic type. Using trypsin inhibitor activity staining method as a criterion for TI degradations, we found that this aspartic type protease colud degrade purified TIs in the presence or absence of 5 mM DTT and the hydrolysis was complete in the former condition. The physiological role of aspartic type protease in the degradation of SPTIs was discussed.