

**Sweet potato (*Ipomoea batatas* (L.) Lam)**  
**trypsininhibitors, the major root storage proteins,**  
**inhibit one endogenous serine protease activity.**

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**Abstract**

Proteases were purified successively by trypsin-Sepharose 4B, sweet potato (*Ipomoea batatas* [L.] Lam) trypsin inhibitor (SPTI) Sepharose 413, benzamidine-Sepharose 6B, and arginine-Sepharose 4B affinity columns from crude extracts of SP dormant roots. One of them, Arg-1, was specific to the substrate benzoyl-arginine-p-nitroanilide, with an optimal pH 8.0. Arg-1 migrated as a single band of 20 kDa in SDS-PAGE, detected by activity staining. The activity was completely inhibited by SPTI in a dose-dependent manner. The activity was inhibited by aprotinin and soybean TI, but not by E-64, pepstatin A or EDTA. This suggested that Arg-1 was a serine type protease. inhibited endogenously by SPTI. Denatured SPTI could be degraded by Arg-1 in vitro. The physiological role of SPTI in the regulation of Arg-1 activity was discussed. (C) 2002 Elsevier Science Ireland Ltd. All rights reserved. [References: 36]