

# **A novel calcium-independent enzyme capable of incorporating putrescine into proteins. Biochem. Biophys**

賴文福

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摘要

## **Abstract**

A  $\text{Ca}^{++}$ -independent enzyme capable of incorporating  $[3\text{H}]$ -putrescine into proteins was detected in the rat intestine mucosa. The  $\text{Ca}^{++}$ -independent incorporation of  $[3\text{H}]$ -putrescine into proteins was temperature-, pH-, time-, and dose-dependent. However, this enzyme was absent in the gastric mucosa. Similar to testicular  $\text{Ca}^{++}$ -dependent transglutaminase, the optimal pH of intestinal  $\text{Ca}^{++}$ -independent enzyme was 9.0. At  $10^{-5}$  M or less putrescine concentrations, the  $\text{Ca}^{++}$ -independent enzyme in an intestinal cytosol preparation showed a greater activity than did the  $\text{Ca}^{++}$ -dependent transglutaminase. However, at higher putrescine concentrations, the latter showed a greater activity than did the former. Both the intestinal  $\text{Ca}^{++}$ -dependent and independent enzymes were inhibited by cystamine, thermal labile at 50 degrees C and precipitated by 30 to 50% saturation of ammonium sulfate. The fact that these two enzymes shared many similar characteristics, with the exceptions of  $\text{Ca}^{++}$ -requirement, suggests that they may have similar active site and intrinsic molecular function(s).