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论著

人的基因工程氨酰基脯氨酸二肽酶的多效酶活性

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摘要 目的 研究人氨酰基脯氨酸二肽酶除催化水解C端为脯氨酸残基的二肽外，是否还有G类有机磷化合物水解酶（G酶）活性。方法 用基因工程技术克隆及表达人的重组氨酰基脯氨酸二肽酶。氨酰基脯氨酸二肽酶及G酶活性用常规方法测定。结果 COS-7细胞表达的人氨酰基脯氨酸二肽酶催化有机磷化合物梭曼的水解，也水解二肽化合物Gly-Pro。两种活性比未转染的COS-7细胞高2倍。比较转染了带有氨酰基脯氨酸二肽酶基因的重组载体的COS-7细胞和对照组细胞中的两种酶活性，可以看到有平行的升高趋势及恒定的酶活性比值。结论 G酶和氨酰基脯氨酸二肽酶为同一个酶，或至少属于同工酶。

关键词 水解酶类,有机磷化合物 氨酰基脯氨酸二肽酶 肝 二肽类 梭曼 人

分类号 Q556

Pleiotropic enzyme activities of genetically engineered human prolidase

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Abstract

AIM To investigate whether the human prolidase possesses the G-type organophosphate hydrolyzing enzyme(Gase) activity besides its ability to catalyze the hydrolysis of the dipeptides bearing a proline residue at the C-terminus. **METHODS** Genetic engineering techniques were used in the cloning and expression of the recombinant human prolidase. Prolidase and Gase activities were assayed in the conventional ways. **RESULTS** The recombinant human prolidase expressed in COS-7 cells catalyzed the hydrolysis of organophosphorous compound soman as well as the hydrolysis of dipeptide Gly-Pro. Both activities were two-folds higher than that in the non-transformed COS-7 counterpart. Comparison between the two activities in COS-7 cells transfected with the recombinant vector containing the prolidase gene and the control cells showed parallel elevation with a constant ratio. **CONCLUSION** It is infered that the Gase and the prolidase are of the same enzyme, or at least belong to isozyme.

Key words hydrolases organophosphorous compounds prolidase liver dipeptides soman human

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