小腸粘膜増殖機序の遺伝子学的解析

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2001 Fiscal Year Final Research Report Summary

Molecular Analysis of the Mechanisms of Proliferation of the Small intestine

Research Project

Project/Area Number

10671168

Research Category

Grant-in-Aid for Scientific Research (C)

Allocation Type

Single-year Grants

Section

一般

Research Field

Digestive surgery

Research Institution

Kanazawa University

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Project Period (FY)

1998 – 2001

Keywords

small intestinal mucosa / regeneration and proliferation / c-fos / c-jun / aging / massive small bowel resection / ischemia / reperfusion injury

Research Abstract

The immediate early genes are induced rapidly and transiently in most tissues after a wide variety of injury. These genes are regulate the expression of cellular response after injury. We investigated the expression of c-fos and c-jun genes in small intestinal mucosal epithelium of rats after various injuries. In the study to determine the effect of aging on growth of the small intestinal epithelium following fasting and refeeding, the expression of c-fos and c-jun mRNA significantly increased after refeeding in young rats than in adult rats, as well as the proliferative activity. In the study to investigate the mechanism of regeneration and degeneration of small intestinal mucosa following ischemia/reperfusion, the expression of c-fos and c-jun mRNA and the proliferative activity increased markedly after reperfusion. Interestingly, apoptotic cells were observed in villi and were consistent with the expression of c-Fos and c-Jun proteins. In the study to investigate the compensatory mucosal proliferation of the residual small intestine after massive small bowel resection, the massive small bowel group showed an increase in the expression of c-fos and c-jun mRNA after the

operative procedure. From these results, overexpression of c-fos and c-jun play an important role in regenaration and proliferation of small intestinal mucosal epithelium in the studies that we performed. Now, we have been researching the signal transduction system using ischemia/reperfusion model in rats.

Research Products (6 results)

All Other

All Publications

[Publications] 伊藤 博: "小腸阻血・再潅流と前初期遺伝子c-fos, c-junの過剰発現に関する実験的研究"金沢大学十全医学会雑誌. 106・6. 644-653 (1997)

[Publications] 根塚秀昭: "小腸粘膜増殖の加齢に伴う変化と前初期遺伝子c-fos, c-junの発現に関する実験的研究"金沢大学十全医学会雑誌. 108・2. 157-165 (1999)

[Publications] Hiroshi Ito: "Activation of immediate early gene, c-fos and c-jun in the rat small intestine after ischemia/reperfusion"Transplantation. 69・4. 598-604 (2000)

[Publications] Hiroshi, Ito: "Overexpression of immediate early gene, c-fos and c-jun in the rat small intestine after ischemia/reperfusion"J Juzen Med Soc. 106-6. 644-653 (1997)

[Publications] Hideaki Nezuka: "Age-related changes in the expression of the immediate early gene, c-fos and c-jun in the regenerating small intestine of rats"J Juzen Med Soc. 108-2. 157-165 (1999)

[Publications] Hiroshi Ito: "Activation of immediate early gene, c-fos and c-jun in the rat small intestine after ischemia/reperfusion"Transplantation. 69-4. 598-604 (2000)

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