Carcinogenresistance mechanism in the small intestinal tracts

1993 Fiscal Year Final Research Report Summary

Carcinogenresistance mechanism in the small intestinal tracts

Research Project

Project/Area Number

03670611

Research Category

Grant-in-Aid for General Scientific Research (C)

Allocation Type

Single-year Grants

Research Field

Digestive surgery

Research Institution

FUKUI MEDICAL SCHOOL (1992-1993)
Kanazawa University (1991)

Principal Investigator

YAMAGUCHI Akio Faculty of Medicine, Fukui Medical School, Associate Professor, 医学部, 助教授 (10174608)

Project Period (FY)

1991 – 1993

Keywords

Carcinogenesis / Xanthine oxidase / Migration time

Research Abstract

To clarify the organ specificity of the carcinogenresistance of the small bowel, a segment of the ileum was interposed in the distal colon in male wister rats. The rats were administered MNNG at a dose of 2.5 mg/day via the rectum for 2 weeks from the second postoperative week. Cell kinetic analysis of intestinal epithelium was performed by the double labeling method. Also xanthine oxidase activity of ileal and colon mucosa was measured by spectrophotometric assay in crude tissue homegenate.
1. The carcinogenic rate in the interposed ileum was 3.3%, significantly lower than the 38.3% in the distal colon. Also the number of cancers per rat was 0.03 in the interposed ileum, significantly lower than 0.07 in the distal colon.
2. The migration time of the MNNG-treated group was 91.4〕SY.+-.〔21.1 hours in the distal colon and 40.6〕SY.+-.〔8.2 hours in the interposed ileum.
3. The epithelial cell migration time from the bottom of the crypt to the surface in the interposed ileum was significantly shorter than that in the distal colon.
4. Xanthine oxidase activity for interposed ileum was sinificantly higer than that for distal colon.
From these results, it was suspected that the rapid renewal rates and high xanthine oxidase activity were the principal carcinogen-resistance mechanism of the small bowel.

Research Products (2 results)

All | Other

All | Publications (2 results)

[Publications] 黒阪慶幸: "小腸の発癌抵抗性に関する実験的研究" 日本消化器外科学会雑誌. 26(12). 2793-2802 (1993)

[Publications] Yoshiyuki Kurosaka: "Carcinogenresistance mechanism in the small intestinal Tracts" The Japanese Journal of Gastroenterological Surgery. vol 26(12). 2793-2802 (1993)

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