肝細胞発癌性機序における癌遺伝子および細胞増殖因子膜レセプターの関与について

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雑誌名	昭和62(1987)年度 科学研究費補助金 一般研究(C)研究成果報告書概要
巻	1986　1987
ページ	2p.
発行年	1989-03-29
URL	http://doi.org/10.24517/00067908

1987 Fiscal Year Final Research Report Summary

Roles of oncogenes and growth factor receptors in hepatocarcinogenesis

Research Project

Project/Area Number

61570333

Research Category

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

Allocation Type

Single-year Grants

Research Field

Gastroenterology

Research Institution

KANAZAWA UNIVERSITY

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Project Period (FY)

1986 – 1987

Keywords

oncogene / growth factor / 増殖因子

Research Abstract

Oncogenes and growth factor receptors were analyzed in hepatomas. Radioreceptor assays using <125D>I- labeled ligand revealed the high binding capacity of epidermal growth factor (EGF) and the low binding of insulin in PLC/ORF/5 and Hep G2 human hepatoma-derived cell lines. The binding of insulin-like growth factor-I (IGF-I) in PLC/PRF/5 cells was significantly higher than that in Hep G2 cells. Dot blot analyses of DNA and mRNA of the two cell lines showed expressions of all 12 oncogenes tested. There was no oncogene specifically expressed in hepatoma cells. EGF did enhanced the DNA synthesis of the hepatoma cells, but the oncogene expression did not change. We examined the oncogene products and growth factor-related proteins in surgically resected hepatoma tissues and the two hepatoma cell lines using an immunohistochemical method. EGF receptor was stained in the cell membrane of 4 out of 10 hepatoma tissues and the two hepatoma cell lines. The staining intensity was stronger in the cancerous portion than in the non-cancerous portion. The myc product was positive in the nuclei of 2 out of 10 hepatomas and in the two cell lines. The ras product was positive in the cytoplasm of the two cell lines, not in the hepatoma tissues. Neither EGF nor TGF was positive. From these, many oncogenes may be involved in the multistep hepatocarcinogenesis.

Published: 1989-03-29