

SFME細胞を用いた造血器腫瘍発がん遺伝子のモニター法の確立

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雑誌名	平成4(1992)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	1991 1992
ページ	2p.
発行年	1994-03-23
URL	http://doi.org/10.24517/00067450



1992 Fiscal Year Final Research Report Summary

Establishment of oncogene-monitoring system in hematologic malignancies using SFME cells

Research Project

Project/Area Number

03671181

Research Category

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

Allocation Type

Single-year Grants

Research Field

Hematology

Research Institution

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Project Period (FY)

1991 - 1992

Keywords

SFME cell / Oncogene / Hematologic malignancy

Research Abstract

- Objective: In this study, it has been attempted to establish a useful method for monitoring oncogenes in hematologic and other malignancies using Serum-Free Mouse Embryo (SFME) cells which are readily transformed by human cancer cells-derived proto-oncogenes.
- Establishment of culture condition of SFME cells: First, in order to obtain the best culture condition for SFME cells, the cells were cultured under various conditions. It became clear that it is essential to use purified water for cultures and to add various additives (EGF etc.) at the time of medium exchange. Furthermore, a glass apparatus is not suitable for culturing SFME.

3. Tumorigenicity of H-ras and c-myc proto-oncogenes-transformed SFME cells: It was confirmed that transformed SFME cells are transplantable to syngeneic mouse (BALB/C), and are able to develop tumor in mouse.
4. Characteristics of transformed SFME cells: Transformed SFME cells were injected subcutaneously into BALB/C mouse and patterns of involvement in the various organs were observed sequentially. Consequently, a transformed cell line which frequently metastasize to the lung (r/mHM-SFME-1) were established. In an attempt to develop a gene-monitoring system, numbers of metastasized r/mHM-SFME-1 cells in the lung of BALB/C were analyzed using PCR method. The detectable minimum number of metastasized cells in the lung per mouse was 1×10^4 cells, and there was a linear correlation between the amount of DNA and a number of metastasized cell.
5. Application of this system for oncogene monitor in hematologic malignancies: Analyzing SFME cells transformed by human leukemic cells-derived proto-oncogene make it possible to evaluate chemotherapeutic effects and to detect minimal residual disease readily.

Research Products (12 results)

All Other

All Publications (12 results)

- [Publications] Nakamura,S.: "Application of bromodeoxyuridine(BrdU)and anti-BrdU monoclonal antibody for the in vivo analysis of proliferative characteristics of human leukemic cells in bone marrows." *Oncology*. 48. 285-289 (1991) ▼
- [Publications] Nakamura,S.: "Analysis of the proliferative characteristics of acute leukemic cells." *Proceeding of the 4th Meeting og the German-Japanese Cooperative Congress of Clinical Cytology*. P.149-158 (1991) ▼
- [Publications] Nakamura,S.: "Argyrophilic proteins of the nucleolar organizer region in acute leukemias and its relation to the S-phase fraction of leukemic cells." *Acta Haematol*. 87. 6-10 (1992) ▼
- [Publications] Nakamura,S.: "Analysis of proliferative characteristics of tumor cells by the silver-staining technique of the nucleolar organizer regions." *Mitteilungsdienst der GBK*. 20. 24-27 (1992) ▼
- [Publications] Nomura,T.: "Non-transformed,but not ras/myc-transformed,serum-free mouse embryo cells recover from growth suppression by azatyrosine." *Jpn J Cancer Res*. 83. 851-858 (1992) ▼
- [Publications] Uehara,T.: "Apoptotic cell death of primed CD45RO⁺ T lymphocytes in Epstein-Barr virus-induced infections mononucleosis." *Blood*. 80. 452-458 (1992) ▼
- [Publications] Nakamura,S.: "Application of bromodeoxyuridine (BrdU) and anti-BrdU monoclonal antibody for the in vivo analysis of proliferative characteristics of human leukemic cells in bone marrows." *Oncology*. 48(4). 285-289 (1991) ▼
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- [Publications] Nakamura,S.: "Analysis of proliferative characteristics of tumor cells by the silver-staining technique of the nucleolar organizer regions." *Mitteilungsdienst der GBK*. 20(62). 24-27 (1992) ▼
- [Publications] Nomura,T.: "Non-transformed, but not ras/myc-transformed, serum-free mouse embryo cells recover from growth suppression by azatyrosine." *Jpn J Cancer Res*. 83(8). 851-858 (1992) ▼
- [Publications] Uehara,T.: "Apoptotic cell death of primed CD45RO⁺ T lymphocytes in Epstein-Barr virusinduced infectious mononucleosis." *Blood*. 80(2). 452-458 (1992) ▼

URL: https://kaken.nii.ac.jp/report/KAKENHI-PROJECT-03671181/036711811992kenkyu_seika_hokoku_

Published: 1994-03-23