

Synthesis of Antitumor Benzophenanthridine Alkaloids and Related Compounds

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| メタデータ | 言語: jpn 出版者: 公開日: 2022-11-11 キーワード (Ja): キーワード (En): 作成者: Hanaoka, Miyoji メールアドレス: 所属: |
| URL | https://doi.org/10.24517/00067930 |

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1987 Fiscal Year Final Research Report Summary

Microscopic image processing system based on personal microcomputer

Research Project

Project/Area Number

61870002

Research Category

Grant-in-Aid for Developmental Scientific Research

Allocation Type

Single-year Grants

Research Field

神経解剖学

Research Institution

University of Kanazawa School of Medicine

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Project Period (FY)

1986 – 1987

Keywords

Image processing / Fluorescence microscopy / 蛍光顕微鏡 / 網膜神経細胞

Research Abstract

A convenient color image processing system was developed consisting essential 5 interrelated components which were obtained easily from the vendor in Japan, CCD color TV camera (IK 1570, Nakamura Scientific Co. Ltd.), homemade simplified wideband video amplifier, high speed color image data acquisition interface board (Nippon Board Computer Co. Ltd.), color video monitor and 16 bits personal microcomputer system (PC-9801Vm2, NEC Co., Ltd.) with the high resolutional RGB terminal display (640x400 dots), color dot printer for hard copy and the coordinate data input equipoent called mouse, Amplitied video signal is fed into the image processing board to digitize 256x256 pixels with each RGB 6 bits binary data at 1/60 secons and to store the data in the memories on the board. In order to display the image data processed on the high resolution RGB monitor, mictocomputer converts the on pixel data with 64 graded density to 5 graded 2.2 dots pattern of the R, G, and B plane, respectively. Software has been dfeceloped by N88 DISK BASIC (86) and machine

language subroutine for acquiring, displaying, controlling and measuring the image sata. This color image processing system was applied to two different fluorescent microscopic image data which were obtained by the intracellular injection of exogenous fluorescent dye (7% Lucifer Yellow) through the glass mictroelectrode into the cultured mouse neuroblastome (NIE 115) cells and by the histochemical methods to detect the endogenout dopamine dluorescence in the carp retina. Our experimental results show that the wideband video signal amplifier, color density conversion methods and adding methods to the image data of many pictures acquired from the same preparation are very effective to rise up shape of cell body from obscure surroundings on the weak fluorescent microscopic image.

Research Products (11 results)

AllOther

AllPublications (11 results)

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URL:

https://kaken.nii.ac.jp/report/KAKENHI-PROJECT-61870002/618700021987kenkyu_seika_hokoku_

Published: 1989-03-29