

# 抗腫瘍性ベンゾフェナンスリジナルカロイド及び 関連化合物の合成

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# 1987 Fiscal Year Final Research Report Summary

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## Microscopic image processing system based on personal microcomputer

Research Project

### Project/Area Number

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61870002

### Research Category

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Grant-in-Aid for Developmental Scientific Research

### Allocation Type

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Single-year Grants

### Research Field

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神経解剖学

### Research Institution

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### Project Period (FY)

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1986 - 1987

### Keywords

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

### Research Abstract

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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., Lts.) 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 seconds 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 dfeveloped by N88 DISK BASIC (86) and machine


language subroutine for acquiring, displaying, controlling and measuring the image data. 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 microelectrode into the cultured mouse neuroblastoma (NIE 115) cells and by the histochemical methods to detect the endogenous dopamine fluorescence 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)


All Other

All Publications (11 results)


[Publications] KATO,S.: Brain Res.329. 390-394 (1985) 

[Publications] NEGISHI,K.: Brain Res.362. 389-393 (1986) 


[Publications] TERANISHI,T.: Neuroscience. 20. 935-950 (1987) 


[Publications] ISHITA,S.: J,Neurochem.50. 1-6 (1988) 


[Publications] SHIMADA,Y.: IEICE,Technical Report. MBE86-100. 45-52 (1987) 


[Publications] SHIMADA,Y.: IEICE,Technical Report. 

[Publications] KATO, S.: "L-Glutamate depolarizes ON-OFF transient type of amacrine cells in the carp retina" Brain Res.329. 390-394 (1985) 

[Publications] NEGISHI, K.: "An immunohistochemical study on the river lamprey retina" Brain Res.362. 389-393 (1986) 

[Publications] TERANISHI, T.: "Function and morphological correlates of amacrine cells in carp retina" Neuroscience. 20. 935-950 (1987) 

[Publications] SHIMADA, Y.: "Microscopic image processing system based on personal microcomputer" IEICE, Technical Report. MBE86-100. 45-52 (1987) 

[Publications] SHIMADA, Y.: "Microscopic image processing system based on personal microcomputer: An application to the fluorescent microscopic image processing" IEICE, Technical Report. in press 

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