

# Mutagenicity in human bladder cancer cell line exposed to hematoporphyrin derivative photoradiation and ultraviolet Radiation

メタデータ	言語: jpn 出版者: 公開日: 2022-10-27 キーワード (Ja): キーワード (En): 作成者: Naito, Katsusuke メールアドレス: 所属:
URL	<a href="https://doi.org/10.24517/00067326">https://doi.org/10.24517/00067326</a>

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# 1991 Fiscal Year Final Research Report Summary

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## Mutagenicity in human bladder cancer cell line exposed to hematoporphyrin derivative photoradiation and ultraviolet Radiation

Research Project

### Project/Area Number

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02670701

### Research Category

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

### Allocation Type

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Single-year Grants

### Research Field

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Urology

### Research Institution

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Yamaguchi University School of Medicine (1991)  
Kanazawa University (1990)

### Principal Investigator

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### Co-Investigator(Kenkyū-buntansha)

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### Project Period (FY)

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1990 – 1991

### Keywords

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Photodynamic action / Mutagenicity / Tissue culture / Hematoporphyrin derivative / UVB / Argon-dye laser / アルゴン色素レーザー

### Research Abstract

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Cell culture studies have been performed to compare the mutagenic potential for hematoporphyrin derivative photoradiation and UV radiation. The mutation frequency in human bladder cancer cells (KK-47) at the hypoxanthine-guanine phosphoribosyltransferase locus was measured using resistance to 6-thioguanine. Treatment with UVB (wavelength ; 280-320 nm) was effective in producing mutants resistant to 6-thioguanine, but treatment with neither UVA (wavelength ; 300-430 nm) nor hematoporphyrin derivative photoradiation (at comparable toxicity levels) using argon-dye laser (wavelength ; 630 nm) did not induce any mutagenic activity above background levels. Additional studies regarding hematoporphyrin derivative UV radiation are needed. And in vivo carcinogenic studies will have to be performed to determine the long-term effects of hematoporphyrin derivative photoradiation.


## Research Products (3 results)


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All Other

All Publications (3 results)

[Publications] Katsusuke Naito, et al.: "Integral photodynamic treatment of refractory multifocal bladder tumors" The Journal of Urology. 146. 1541-1545 (1991) 

[Publications] 内藤 克輔他: "光線力学的作用のMutagenicityに関する研究" 日本レーザー医学会誌. 

[Publications] Katsusuke Naito, et al: "Integral laser photodynamic treatment of refractory multifocal bladder tumors." J. Urol.,. 146. 1541-1545 (1991) 

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Published: 1993-03-15