

慶應義塾大学学術情報リポジトリ

Keio Associated Repository of Academic resources

Title	Isolation and characterization of a form of cytochrome P-450 with high specificity to aflatoxin B ₁ from 3-methylcholanthrene-treated hamsters
Sub Title	
Author	福原, 守雄(Fukuhara, Morio) 溝上, 敬之助(Mizokami, Keinosuke) 能美, 健彦(Nomi, Takehiko) 木村, 都(Kimura, Miyako) 高仲, 正(Takanaka, Akira) 大森, 義仁(Omori, Yoshihito)
Publisher	共立薬科大学
Publication year	1987
Jtitle	共立薬科大学研究年報 (The annual report of the Kyoritsu College of Pharmacy). No.32 (1987.),p.128- 128
Abstract	
Notes	学会講演要旨
Genre	Technical Report
URL	http://koara.lib.keio.ac.jp/xoonips/modules/xoonips/detail.php?koara_id=AN00062898-00000032-0140

**Isolation and Characterization of a Form of Cytochrome
P-450 with High Specificity to Aflatoxin B₁ From
3-Methylcholanthrene-treated Hamsters**

M. FUKUHARA*, K. MIZOKAMI**, T. NOHMI**, M. KIMURA,
A. TAKANAKA** and Y. OMORI**

福原守雄*, 溝上敬之助**, 能美健彦**, 木村 都, 高仲 正**, 大森義仁**

[7th International Symposium on Microsomes and Drug Oxidations
(Adelaide Australia, August, 1987) で発表]

S9 fraction of PCB-treated hamsters was shown to be highly active in the induction of aflatoxin B₁ (AFB₁) mutagenicity. The potency of the activity of S9 from various experimental animals is, in the descending order, hamster, rabbit, guinea pig, rat, mouse and *Suncus murinus*. The activity of hamster S9 is more inducible by the treatment with 3-methylcholanthrene (3-MC) than with phenobarbital and is present in hepatic microsomes, indicating that the enzymes responsible for the metabolic activation of AFB₁ might be cytochrome P-450s that could be induced by 3-MC. From hepatic microsomes of 3-MC-treated hamsters, 3 forms of cytochrome P-450 were isolated. These include 2 major forms (Form I and II) and one minor form (Form III). They are different in their physicochemical and catalytic properties. Of these, Form I, having its absorption maximum at 448.5 nm in its CO-complex of reduced form, low spin form of ferric ion and a molecular weight of 56,000, was shown to be highly active in the activation of AFB₁ mutagenicity and in the production of AFB₁-DNA adducts. The activity of Form I is more than 50 times higher in the induction of AFB₁ mutagenicity than cytochrome P-450s purified from the livers of 3-MC-treated rats. Form I could also activate the mutagenicity of other AFB₁-related mycotoxins such as sterigmatocystin and O-methylsterigmatocystin.

* 国立公衆衛生院

** 国立衛生試験所