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**Isolation and Characterization of a Form of Cytochrome  
P-450 with High Specificity to Aflatoxin B<sub>1</sub> From  
3-Methylcholanthrene-treated Hamsters**

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S 9 fraction of PCB-treated hamsters was shown to be highly active in the induction of aflatoxin B<sub>1</sub> (AFB<sub>1</sub>) mutagenicity. The potency of the activity of S 9 from various experimental animals is, in the descending order, hamster, rabbit, guinea pig, rat, mouse and *Suncus murinus*. The activity of hamster S 9 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 AFB<sub>1</sub> 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 AFB<sub>1</sub> mutagenicity and in the production of AFB<sub>1</sub>-DNA adducts. The activity of Form I is more than 50 times higher in the induction of AFB<sub>1</sub> mutagenicity than cytochrome P-450s purified from the livers of 3-MC-treated rats. Form I could also activate the mutagenicity of other AFB<sub>1</sub>-related mycotoxins such as sterigmatocystin and O-methylsterigmatocystin.

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