

# Searches for Functions of Orphan Cytochrome P450 Enzymes

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**Date: Monday, July 9, 2012**

**Time: 14:00 -15:30**

**Venue: Seminar Room No.1, 2<sup>nd</sup> floor, Faculty of Medicine Experimental Research Bldg.,  
the University of Tokyo**



Cytochrome P450 enzymes are the major enzymes involved in the metabolism of drugs (75%) and carcinogens (66%). In humans there are 57 P450 genes. About 1/4 of these do not have established functions and are termed “orphans.” A major objective of this laboratory is to define reactions catalyzed by these orphan P450s. This lecture will focus on the following topics: (1) new reactions for established P450s, (2) LC-MS approaches to find orphan receptors, (3) applications to find substrates for actinomycete *Streptomyces coelicolor* having 18 P450 genes, and (4) new software and sensitive dansylation methods to find orphan human P450s.

Guengerich, F.P., and Cheng, Q. (2011) *Pharmacol. Rev.* 63, 684-699.

“Orphans in the Human Cytochrome P450 Family: Approaches to Discovering Function and Relevance to Pharmacology”

**Organizer: GCOE Program Center for Medical System Innovation through Multidisciplinary Integration,  
The University of Tokyo  
Chiharu Tohyama, Professor  
Center for Disease Biology and Integrative Medicine, Graduate School of Medicine,  
The University of Tokyo**

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