

## MS09-4 Identification and characterization of cytochrome P450 genes in cynomolgus monkey

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Cynomolgus monkeys are used in drug metabolism studies due to their evolutionary closeness and physiological resemblance to humans. Information on the genes for drug-metabolizing enzymes, including cytochrome P450 (CYP), however, was not fully obtained in this species. To this end, we have identified and characterized more than 20 CYP cDNAs in cynomolgus monkey. Most of these CYPs (CYP2A, CYP2B, CYP2C, CYP2D, CYP2E, and CYP3A) had high sequence identities (approximately 91-95%) in amino acid sequences, showed similar tissue expression pattern, and exhibited similar substrate specificities, to human CYPs in the same subfamilies, indicating the molecular resemblance of the CYPs between cynomolgus monkey and human. In contrast, CYP2C76, with only approximately 70% sequence identity to human CYP2Cs in amino acid sequences, was not orthologous to human CYPs and was partly responsible for species difference in drug metabolism between cynomolgus monkey and human. Other than CYP2C76, by analyzing the genome data of rhesus monkey, a closely related species of cynomolgus monkey, we also have identified the novel CYPs that might not be orthologous to human CYPs. Characterization of these CYPs is currently under investigation. The results of these analyses will be presented at the meeting. These data will greatly help to understand the similarities and differences of CYPs between cynomolgus monkey and human.