



Species Difference for the Glucuronidation Metabolism of Testosterone

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SUMMARY. Testosterone, an important hormone in the human body, plays a key role in folliculogenesis. This study aims to determine the species difference for the glucuronidation metabolism of testosterone. *In vitro* glucuronidation metabolism of testosterone catalyzed by dog liver microsomes (DLMs), monkey liver microsomes (MyLM), and rat liver microsomes (RLMs) was investigated. The glucuronide of testosterone can be detected in all the animal liver microsomes, including dog liver microsomes (DLMs), monkey liver microsomes (MyLMs), and rat liver microsomes (RLMs), and the formation of this metabolite was UDP-GA-, substrate-, and liver microsomes-dependent. The metabolic kinetics obeyed Michaelis-Menten kinetics in DLMs, MyLMs, and RLMs incubation system. The apparent affinity constant was calculated to be 1.2, 0.4, and 2.2 μM for DLMs, MyLMs, and RLMs, respectively. In conclusion, this study demonstrated the species difference for the metabolism of testosterone which is an important endogenous substance.

RESUMEN. La testosterona, importante hormona del cuerpo humano, desempeña un papel clave en la foliculogénesis. Este estudio tiene como objetivo determinar la diferencia de las especies para el metabolismo de la testosterona. Se investigó el metabolismo de glucuronidación *in vitro* de la testosterona catalizada por microsomas de hígado de perro (DLMs), de hígado de mono (MyLMs) y de hígado de rata (RLMs). El glucurónido de la testosterona pudo ser detectado en los microsomas de hígado de todos los animales, es decir microsomas de hígado de perro (DLMs), de mono (MyLMs) y de rata (RLMs); la formación de este metabolito fue UDPGA-, sustrato-, y microsomas hepáticos dependientes. La cinética metabólica obedeció la cinética de Michaelis-Menten en el sistema de incubación de DLMs, MyLMs y RLMs. La constante de afinidad aparente fue calculada en 1.2, 0.4 y 2.2 μM para DLMs, MyLMs y RLMS, respectivamente. En conclusión, este estudio demostró la diferencia de las especies para el metabolismo de la testosterona, que es una importante sustancia endógena.

KEY WORDS: testosterone, glucuronidation, species difference, kinetic constant

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