

## The Influence of the Therapeutic Window of Hypnotic Agent by Methylophiopogonanone A

Xiao-Jun LIU #, Jin-Fang XIAO #, Jian-Jun TANG #, Ya-Ting ZHANG, Hai-Tang WANG, Chen ZHU,  
Yu JIANG, Chun-Yan XIE, Gao-Wang LIU\*, Zhi-Jie LIAO, Xiao-Wei CHEN & Hai-Hong FANG

Department of Anesthesia, Nanfang Hospital, Southern Medical University,  
Guangzhou, People's Republic of China, 510515

**SUMMARY.** Herb-drug interaction has been receiving more and more attention in recent years with the popular utilization of herbs. Methylophiopogonanone A is an important ingredient isolated from Han-maidong and Chuan-maidong (*Ophiopogon japonicus* (L.f.) Ker Gawl.). The present study aims to evaluate the inhibition of methylophiopogonanone A towards the glucuronidation of propofol which is a typical hypnotic agent, trying to indicate the potential influence of methylophiopogonanone A towards the therapeutic window of propofol. Noncompetitive inhibition of methylophiopogonanone A towards the glucuronidation of propofol was demonstrated using Dixon plot and Lineweaver-Burk plot, and the inhibition kinetic parameter ( $K_i$ ) was calculated to be 108.8  $\mu\text{M}$ . All the results obtained in the present study indicated the potential herb-drug interaction between propofol and methylophiopogonanone A-containing herbs.

**RESUMEN.** La interacción de hierbas con drogas ha estado recibiendo cada vez más atención en los últimos años con la utilización popular de hierbas. La metilphiopogonanona A es un importante ingrediente aislado de Han-Maidong y Chuan-Maidong (*Ophiopogon japonicus* (Lf) Ker Gawl.). El presente estudio tiene como objetivo evaluar la inhibición de metilphiopogonanona A sobre la glucuronidación de propofol, que es un agente hipnótico típico, tratando de establecer la posible influencia de metilphiopogonanona A hacia la ventana terapéutica de propofol. Se demostró la inhibición no competitiva de metilphiopogonanona A sobre la glucuronidación de propofol usando Dixon plot y Lineweaver-Burk, y el parámetro cinético de inhibición ( $K_i$ ) se calculó en 108,8  $\mu\text{M}$ . Todos los resultados obtenidos en el presente estudio indican la posible interacción entre propofol con hierbas que contienen metilphiopogonanona A.

**KEY WORDS:** Herb-drug interaction, Methylophiopogonanone A, propofol.

\* Author to whom correspondence should be addressed. E-mail: liugaowang725@163.com

# These three authors equally contributed to this work.