Latin American Journal of Pharmacy
(formerly *Acta Farmacéutica Bonaerense)*
Lat. Am. J. Pharm. **34** (1): 210-2 (2015)

Short communication

Received: November 5, 2014
Accepted: November 19, 2014

Biotransformation of Yemuoside YM10 into Brachyantheraoside A2 Can Strengthen the Drug-Drug Interaction with Anti-Tumor Drug Irinotecan

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SUMMARY. **Drug-drug interaction (DDI) strongly limited the clinical application of irinotecan which is a clinically important drug for cancer therapy. The present study aims to investigate the drug-drug interaction between herbal active ingredients yemuoside YM10 and brachyantheraoside A2 and irinotecan. YM10 (100 uM) exhibited negligible inhibition towards the glucuronidation of SN-38. In contrast, 80% activity of SN-38 glucuronidation was inhibited by the addition of 100 uM of brachyantheraoside A2. Furthermore, the inhibition potential of brachyantheraoside A2 towards the glucuronidation of SN-38 was investigated at multiple concentrations of SN-38, and the similar inhibition capability was found. The IC50 values were 52.5 uM, 48.9 uM, 45.6 uM, and 45.7 uM for 0.5 uM, 1 uM, 2 uM, and 3 uM of SN-38, respectively. In conclusion, the present study showed that biotransformation of Yemuoside YM10 into brachyantheraoside A2 can strengthen the drug-drug interaction with anti-tumor drug irinotecan.**

RESUMEN. La interacción fármaco-fármaco (DDI) limita fuertemente la aplicación clínica de irinotecán, un medicamento clínicamente importante para la terapia del cáncer. El presente estudio tiene como objetivo investigar la interacción fármaco-fármaco de principios activos vegetales (yemuósido YM10 y brachyantheraósido A2) sobre el irinotecán. YM10 100 uM exhibió una inhibición insignificante hacia la glucuronidación de SN-38. En contraste, 80% de actividad de glucuronidación de SN-38 fue inhibida por la adición de 100 uM de brachyantheraósido A2. Además, el potencial de inhibición de brachyantheraósido A2 hacia la glucuronidación de SN-38 se investigó a diferentes concentraciones de SN-38 y se encontró que la capacidad de inhibición es similar. Los valores de IC50 fueron 52,5, 48.9, 45,6, y 45.7 uM frente a 0,5, 1, 2 y 3 uM de SN-38, respectivamente. En conclusión, el presente estudio demostró que la biotransformación de Yemuoside YM10 en brachyantheraoside A2 puede fortalecer la interacción fármaco-fármaco con la droga antitumoral irinotecán.

KEY WORDS: Brachyantheraoside A2, Drug-drug interaction, Yemuoside.

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ISSN 0326 2383 (printed ed.)
ISSN 2362-3853 (on line ed.)