Latin American Journal of Pharmacy
(formerly *Acta Farmacéutica Bonaerense)*
Lat. Am. J. Pharm. **32** (7): 960-7 (2013)

Regular article
Received: April 27, 2013
Revised version: June 13, 2013
Accepted: June 15, 2013

Evaluation of *In Vitro* Percutaneous Permeation and Anti-Inflammatory and Antinociceptive Activity of Aconitine Ethosomes

Xiao-ping LIU [1], Ru-wen LIN [1], Fan ZHU [1], & Jun-li LI [2]*

[1] *School of Chemical Engineering, Wuhan University of Technology, Wuhan, Hubei 430070, PR China*
[2] *School of Science, Wuhan University of Technology, Wuhan, Hubei 430070, PR China*

***SUMMARY*. The aim of this research was to prepare aconitine ethosomes and evaluate the percutaneous permeation behavior *in vitro* on rat's skin, as well as anti-inflammatory and antinociceptive activity in mice. Aconitine ethosomes was prepared by ethanol injection method. Then, *in vitro* permeation studies were performed using dual-chamber diffusion and compared with the aconitine ethanol solution to evaluate the *in vitro* percutaneous permeation properties of aconitine ethosomes. Finally, the hot plate and acetic acid-induced writhing tests in mice were established to investigate its antinociceptive activity, egg albumin-induced paw edema and xylene-induced ear edema tests in mice were established to evaluate its anti-inflammatory effect. The permeation rate of aconitine ethosomes was significantly higher than that of aconitine ethanol solution. Additionally, a significant antinociceptive activity was detected in the hot plate and acetic acid-induced writhing tests, when compared with the control group. Furthermore, the paw edema induced by egg albumin and the ear edema induced by xylene in mice were all significantly inhibited by aconitine ethosomes. The results indicate that aconitine ethosomes have higher accumulation of transdermal absorption, faster skin permeation rate and significant anti-inflammatory and antinociceptive activity. In conclusions, the aconitine ethosomes may be promising used as a transdermal drug delivery for treating rheumatoid arthritis and other symptoms.**

KEY WORDS: Aconitine, Anti-inflammatory, Antinociceptive activity, Ecthosomes, Percutaneous Permeation profile, Transdermal delivery.

* Author to whom correspondence should be addressed. *E-mail:* lijunli0424@sina.com

ISSN 0326-2383