Latin American Journal of Pharmacy
(formerly *Acta Farmacéutica Bonaerense)*
Lat. Am. J. Pharm. **33** (8): 1371-5 (2014)

Short communication
Received: April 26, 2014
Revised version: June 30, 2014
Accepted: July 1, 2014

Anti-Inflammatory Effects of a Non-Anticoagulant Heparin

Lin YUAN [1,2] *#, Dongpo SUN [3]#, & Yu WAN [1]*

[1] *Center for Medical Research and Department of Physiology, School of Basic Medical Sciences, Wuhan University, Wuhan 430071, P.R. China*

[2] *College of Pharmacy, South-Central University for Nationalities, Wuhan 430074, P.R. China*

[3] *Science and Technology Office, South-Central University for Nationalities, Wuhan 430074, P.R. China*

SUMMARY. **The anti-inflammation effect of N-desulfated heparin, a non-anticoagulant heparin, was assessed *in vivo* and *in vitro*. The data showed that N-desulfated heparin significantly inhibited the leukocytes recruitment to the peritoneal cavity in a dose-dependent manner. It also suppressed the picrylchloride induced delayed-type hypersensitivity reaction at both induction phase and effector phase. However, N-desulfated heparin did not affect the acute hepatitis induced by carbon tetrachloride and ear edema induced by xylene. The *in vitro* study of the adhesion of human Jurkat T cells to endothelial cell line ECV-304 showed that N-desulfated heparin could decrease binding rate stimulated by IL-2, IFN-γ or TNF-α. Our results indicated that N-desulfated heparin has anti-inflammation property and the inhibition of the migration of immunity cells maybe one of its mechanisms.**

RESUMEN. El efecto anti-inflamación de la heparina N-desulfatada, una heparina no anticoagulante, se evaluó *in vivo* e *in vitro*. Los datos mostraron que la heparina N-desulfatada inhibió significativamente el reclutamiento de leucocitos a la cavidad peritoneal de manera dosis-dependiente. También suprime la reacción de hipersensibilidad de tipo retardado del cloruro de picrilo inducida tanto en fase de inducción como en fase efectora. Sin embargo, la heparina N-desulfatada no afectó a la hepatitis aguda inducida por tetracloruro de carbono ni el edema de oreja inducido por xileno. El estudio *in vitro* de la adhesión de células Jurkat T humanas endoteliales a la línea celular ECV-304 mostró que la heparina N-desulfatada podría disminuir la tasa de unión estimulada por la IL-2, IFN-γ o TNF-α. Nuestros resultados indican que la heparina N-desulfatada tiene propiedades anti-inflamatorias y que la inhibición de la migración de las células inmunitarias sea tal vez uno de sus mecanismos.

KEYWORDS: Anti-inflammation, Immunity cells, Migration, N-desulfated heparin.

# The authors contributed equally to this work.
* Authors to whom correspondence should be addressed. E-mail: yuanlin@scuec.edu.cn (Lin Yuan); wanyu@whu.edu.cn (Yu Wan).

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