Latin American Journal of Pharmacy
(formerly *Acta Farmacéutica Bonaerense)*
Lat. Am. J. Pharm. **31** (10): 1450-6 (2012)

Regular Article
Received: October 12, 2012
Revised version: October 29, 2012
Accepted: November 5, 2012

Tissue Distribution Study of Bromhexine Hydrochloride Lung-targeting Injectable Microspheres

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***SUMMARY*. The distribution of the novel lung-targeting bromhexine hydrochloride injectable microspheres (BHLIM) was investigated *in vivo*. Bromhexine hydrochloride injectable microspheres suspension was prepared by suspending BHLIM in dextrose monohydrate injection. The determination of bromhexine hydrochloride content in tissues by HPLC was investigated methodologically. Afterwards, tissue distribution of the BHLIM in SD rats was carried out. The initial tissue concentrations of bromhexine in control group were significantly higher than those in BHLIMS group and bromhexine was rapidly eliminated in control group. Bromhexine distribute equally in the five tissues of heart, liver, spleen, lung and kidney at different time points in control group while bromhexine have significantly higher concentration in lung than in other tissues in BHLIMS group. BHLIMS group showed the largest value of AUC and r_e for the lung; the targeting efficacy t_e of BHLIMS group is 2.67-2.96 times compared with control group; C_{max} of BHLIM group is 1.78 times compared with control group. The results showed that bromhexine lung-targeting injectable microspheres had obvious lung-targeting performance.**

KEY WORDS: Bromhexine hydrochloride, Injectable microspheres, Lung target, Sustained-release microspheres, Tissue distribution.

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ISSN 0326-2383