Latin American Journal of Pharmacy
(formerly *Acta Farmacéutica Bonaerense)*
Lat. Am. J. Pharm. **30** (8): 1506-11 (2011)

Regular Article
Received: May 23, 2011
Revised version: June 19, 2011
Accepted: June 20, 2011

Antiplatelet and Antithrombotic Effects of ZLJ-6, an Inhibitor of Cyclooxygenase and 5-Lipoxygenase

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***SUMMARY*. Previous study has demonstrated that ZLJ-6, a novel cyclooxygenase (COX) and 5-lipoxygenase (5-LOX) dual inhibitor, potently inhibits the production of thromboxane A_2 (TXA_2) in human whole blood. Since TXA_2 is considered to be one of the most powerful agonists for platelet activation and thrombus formation, in the present study the antiplatelet and antithrombotic effects of ZLJ-6 were investigated. ZLJ-6 significantly reduced thrombus formation in ferric chloride-induced rat arterial thrombosis and plasma TXB_2, 6-keto-$PGF_{1\alpha}$ and LTB4 levels *in vivo*. *In vitro,* arachidonic acid (AA) and collagen-induced platelet aggregation was inhibited by ZLJ-6 in a concentration-dependent manner. The inhibitory effect of ZLJ-6 on the conversion from AA to TXB_2 and PGD_2 *in vitro* further confirmed its COX-1 mediated antiplatelet mechanism. On the contrary, coagulation parameters were not altered by ZLJ-6. These results obtained in this study identify ZLJ-6 as a promising antithrombotic agent with potential clinical application in the modulation of thrombotic disorders.**

KEY WORDS: ZLJ-6, Cyclooxygenase/5-lipoxygenase inhibitor, Platelet aggregation, Antithrombotic activity, Thromboxane A_2.

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ISSN 0326-2383