

- Peng C., Perera P.K., Li .Y.M., Fang. .R., Liu L.F., Li F. . Anti-inflammatory effects of *Clematis chinensis* Osbeck extract (AR-6) may be associated with NF- $\kappa$ B, TNF- $\alpha$ , and COX-2 in collagen-induced arthritis in rat. *Rheumatol Int.* 2011 (<http://www.springerlink.com/content/I5228424740k5604/>) (<http://www.ncbi.nlm.nih.gov/pubmed/21932136>).

**Abstract:**

The root of *Clematis chinensis* Osbeck has been used widely in rheumatoid arthritis in Chinese traditional medicine, and AR-6 is a triterpene saponin isolated from it. In this present study, we investigate the in vivo effects of oral AR-6 in chronic rat with collagen-induced arthritis (CIA) and possible molecular mechanism. CIA was induced by immunizing 56 female Sprague-Dawley (SD) rats with chicken type II collagen (CII). Following eighteen days, the immunization rats with CIA were treated with AR-6 (32, 16, 8 mg/kg), cyclophosphamide (7 mg/kg), and TGP (Total Glucosides of Paeonia) (180 mg/kg) for 7 days, and rats without CIA were given the same volume of purified water. TNF- $\alpha$  and IL-1 $\beta$  levels in peripheral blood will be measured by ELISA, and western blot analysis will be used to detect the expression of NF- $\kappa$ B p65 subunits, TNF- $\alpha$  and COX-2, in synovial membrane. We found that therapeutic treatment with AR-6 markedly improves the paw swelling and histopathological changes. Moreover, the serum levels of pro-inflammatory cytokines TNF- $\alpha$  and IL-1 $\beta$  were markedly lower, and the expression of NF- $\kappa$ B p65 subunits, TNF- $\alpha$  and COX-2, in the synovial membrane of CIA rats was significantly inhibited in the AR-6-treated groups. These results enable to prove that AR-6 has a potential anti-inflammatory effect in CIA rats, and its mechanism may relate to the inhibition of the expression of NF- $\kappa$ B p65 subunits, TNF- $\alpha$  and COX-2.

**Keywords:** *Clematis chinensis* Osbeck – Collagen-induced arthritis – NF- $\kappa$ B – TNF- $\alpha$  – COX-2