

Effect of PON-1629, a Natural Anti-inflammatory Compounds from Soft coral in a type II Collagen-induced Arthritis Rat model.

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abstract

Rheumatoid arthritis (RA) is a chronic inflammatory disease, characterized by synovium unusual proliferation, cartilage destruction and bone erosion. In recent years, there are significant number of secondary metabolites with potent anti-inflammatory properties which have been discovered from marine organisms. In previous study show that inflammation play important role in many chronic diseases, such as rheumatoid arthritis. In present study, the marine natural compound PON-1629 will be investigated *in vitro* and *in vivo* studies. In our results show that the anti-inflammatory effect of PON-1629 were show in LPS stimulated RAW 264.7 cell model with reduced inducible nitric oxide synthase (iNOS) protein expression. *In vivo* study, PON-1629 also significantly attenuate arthritis score and paw edema in Type II collagen-induced arthritis (CIA) rat. Therefore, we also observed that PON-1629 decrease bone erosion in micro CT image and could reduce the serum level of IL-1 β and IL-10 in CIA rats. Histopathological analysis showed that PON-1629 also could reduce the synovium unusual proliferation, pannus formation, cartilage destruction and bone erosion in CIA model. Thus, we summarize that PON-1629 will be serve as a useful therapeutic agent for the treatment of RA

Key words : Rheumatoid arthritis (RA) , collagen-induced arthritis (CIA) , synovium proliferation, anti-inflammation