

Effects of anti-inflammatory coral compound on osteoclast activity of rheumatoid arthritis on rat

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Soft coral have considered an important resource for obtain natural products with several bioactivities and they are now under several kinds of pre-clinical experiments. Our previous study have reported the marine-derived compound, AWA-10, isolated from Formosan soft coral. Moreover, this compound have also show the anti-atherosclerotic effect and the potential to treat multiple sclerosis in vivo study. In the present study, the anti-rheumatoid arthritis of AWA-10 will be investigated in type II collagen induced arthritis. It has been well know that inflammatory responses and bone erosion were play critical pathological roles in RA. The experiments will be assessed by ankle edema assay and RA index. Furthermore, we will explore the possible effects of marine natural product on collagen-induced arthritis by performing histological analysis and immunohistochemistry. We attempt to clarify the cellular mechanisms of inhibitory effects of AWA-10 on osteoclast related, cathepsin K, matrix metalloproteinases-2 (MMP-2) matrix metalloproteinases-9 (MMP-9), and pro-inflammatory tumor necrosis factor- α (TNF- α) proteins expression in rats with RA. Finally, we hope to offer more experimental evidence to support future preclinical studies. This study of in vivo therapeutic mechanisms of the marine-derived sulfone compound can advance our understanding of RA mechanisms and enable rapid screening of marine natural compounds for clinical use.