Research Journal of Pharmaceutical, Biological and Chemical Sciences, 2016, vol.7, N6, pages 2971-2975

Evaluation of anti-inflammatory activity of phosphonates based on the model of chronic autoimmune inflammation of the paws of rats

Valeeva I., Titarenko A., Khaziakhmetova V., Ziganshina L.

Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

Currently, there is an ongoing search for new pharmacological agents capable of exhibiting anti-inflammatory properties in the treatment of chronic autoimmune inflammatory diseases of connective tissue of the movable joints, accompanied by progressive violation of motility of the joints, edema and severe pain, developing joint destruction, disability and disability, particularly in rheumatoid arthritis. Based on white laboratory rats experiments in the modeling of chronic autoimmune inflammation of the paws, similar to the clinical course of chronic autoimmune inflammation of the joints of the human by administering Freund's adjuvant the anti-inflammatory effect of dimephosphone, mephopran, ksidiphone has been evaluated. It has been shown that dimephosphone has an anti-inflammatory effect on the model of chronic autoimmune inflammation of rat paws caused by the administration of Freund's adjuvant. Dimethyl ether of 2-carbometoksipropilphosphonic acid (mephoprane) model of adjuvant arthritis shows inflammatory effect, only when the secondary arthritis, induced by administration of Freund's adjuvant. Ksidiphon has no anti-inflammatory effect, no effect on the rat paw edema, induced by administration of Freund's adjuvant. The results are a prerequisite for carrying out further experimental and clinical studies on the effect of anti-inflammatory mechanisms of phosphonates.

Keywords

Dimephosphone, Freund's adjuvant, Monophosphonate - mephopran (dimethyl ether of 2-carbometoksipropilphosphonic acid) ksidiphone (etidronate), Prednisolone