**Trifolium pratense** L. anti-inflammatory effects in an arthritis animal model

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**Key words:** arthritis; red clover

**Introduction:** Rheumatoid Arthritis (RA) is a systemic autoimmune disorder that affects mainly the joints and evolves a variety of proinflammatory pathways. Although many drugs are used in treatment of RA, some patients do not respond to any current treatment. In addition, most of drugs used in RA usually cause adverse effects. For these reasons, new drugs are need in RA treatment. To illustrate, natural healthy products are being studied specially because their reduced adverse effects. Red clover (*Trifolium pratense* L.), rich in isoflavones, may be an alternative therapy. Red clover dry extract (RCE) can inhibit lymphocyte proliferation (Yang Z, Yao Xue Xue Bao, 43, 1019, 2008). Our goal is to evaluate RCE in an arthritis animal model and lymphocyte proliferation.

**Experimental part:** Arthritis was induced in DBA/J1 mice by collagen bovine type II (CIA) and animals were evaluated as clinical score, according to Brand et al. (Brand DD, Nat Protoc., 2, 1269, 2007). RCE was administrated by gavage for 20 consecutive days at 50, 100 or 200mg/Kg after booster. Lymphocyte cell proliferation and cell viability assays were performed according to Yang Zi et al. (Yang Z, Yao Xue Xue Bao, 43, 1019, 2008) and RCE was prepared using DMSO in concentrations from 0,1 to 0,001mg/mL for in vitro assays.

**Results/Discussion:** RCE was able to reduce clinical scores of RA disease (analysis by two-way ANOVA demonstrated significant effect of drug and days (p<0,001)). Also, RCE reduced lymphocyte proliferation stimulated by ConA at a dose-dependent manner (0,01mg/mL=60% and 0,1mg/mL=80%). Nevertheless, cell viability was above 85% in 0,1mg/mL and above 100% in 0,01 and 0,001mg/mL.

**Conclusion:** This is the first study to evaluate RCE as a therapy for RA. From our data, it is possible that RCE might have a potential as anti-inflammatory agent and be used in chronic inflammation disease like RA.

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