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APPA provides disease modification in preclinical osteoarthritis

Congress Abstract

APPA, a proprietary combination of apocynin and paeonol, was evaluated for inhibition of cartilage destruction in a well-accepted rat model of osteoarthritis. Methods: Male Lewis rats were anesthetized and aseptic procedures utilized to induce a medial meniscal 'tear', under an IACUC-approved protocol. APPA was orally administered at 80mg/kg BID (n=15/group) and animals were euthanized at 3 weeks post surgery. Joints were harvested, fixed in formalin, decalcified, halved in the frontal plane, paraffin embedded, sectioned at three 200um intervals and stained with Toluidine Blue. Joints were scored according to the OARSI criteria, by a Veterinary pathologist blinded to treatment groups. The pathology in the total Joint score was significantly reduced by 21% (p=0.01, Mann Whitney U test) when compared to the vehicle. Tibial and femoral cartilage degeneration scores were also significantly reduced (p=0.01 and p=0.03, respectively, Mann Whitney U test). Rats showed no adverse effects at the 80mg/kg dose and gained weight through the study. Conclusions: APPA was well tolerated, and had no adverse effects when dosed at 80mg/kg BID. Significant decreases in measures of cartilage degradation were observed for a number of well-described histologic parameters. These differences were statistically significant with modest group sizes and relatively short follow-up time points. These results, along with decreased lameness in dogs with clinical OA, indicate that APPA should be further investigated for both pain relief and disease modification.