**UCII** stands for undenatured type II collagen. This active but natural ingredient is extracted from chicken sternum. The unique and patented extraction process retains main patterns of original molecular structure of collagen II: triple helical helix, and glycosylated epitopes.

In humans, there are compelling proofs of safety and efficacy of this ingredient in rheumatoid arthritis (RA) and osteoarthritis (figures).

Mode of action is related to a local mechanism. In RA, there is a recognition in Payer’s patches of the collagen epitopes. The epitopes positively influence the immunoregulatory response signaling required for the development of immunotolerance toward collagen.

**NUMEROUS STUDIES IN ANIMAL MODELS OF OA HAVE SHOWN THE SUPERIORITY WITH UNDENATURED TYPE II COLLAGEN OVER GLUCOSAMINE AND CHONDROITIN IN CLINICAL SIGNS AND BIOMARKERS OF JOINTS**


Changes in WOMAC scores at day 90 from baselines. WOMAC scores from each treatment group were compared to baseline value at specified time points. Each bar presents mean +/- SEM. *p<0.05, **p<0.005 indicate significantly different from baseline

Changes in VAS score at Day 90 from baseline. VAS scores from each treatment group were compared to baseline value at specified time points. Each bar presents mean +/- SEM. **p<0.05 indicates significantly different from baseline.

**UCII** has been also evaluated in dogs using objective and semi-objective endpoints. Studies very consistently confirm the great interest of **UCII** previously depicted in human and horses.

in dogs, efficacy assessment by semi-objective data

Therapeutic efficacy and safety of undenatured type II collagen singly or in combination with Glucosamine and Chondroitin in arthritic dogs - M. D’Altilio et al. Toxicology Mechanisms and methods, 17:1-8, 2007

Main protocol features:
- Performed at Murray State University (KY, USA)
- 20 client owned dogs with clinical signs of osteoarthritis
- Randomly divided into 4 groups:
  - Group I: Placebo
  - Group II: 40 mg providing 10 mg of active UCII once a day
  - Group III: 2 g Glucosamine + 1.6 g Chondroitin
  - Group IV: UCII + Glucosamine + Chondroitin
- Treated once a day for 120 days followed by 30 days withdrawal
- No NSAID treatment 3 weeks before and during the course of the study
- Double blinded (investigators and owners)
- Clinical endpoints: overall pain (by pet owner), pain upon manipulation, exercise associated lameness.

Results and Conclusions:
- Excellent tolerance in every group: no adverse effect, no change in hepatic or renal blood parameters
- No change in Placebo group.
- Only owners of dogs receiving UCII (Groups II and IV) reported an overall improvement from first evaluation (30d) (consistent with results from Peal et al. J Vet Pharmacol Ther 2007)
- Limb manipulation and lameness at exercise were significantly improved in Groups II and IV from day 60.
in dogs, efficacy assessment by objective data


Main protocol features:

- Performed at Murray State University (KY, USA)
- Client owned dogs with clinical signs of moderate osteoarthritis
- Dogs weighing over 40 pounds (18.1 kg), without severe concurrent disease
- Randomly divided into 4 groups (n=7-10 dogs/group):
  - Group I: Placebo
  - Group II: 40 mg providing 10 mg of active UCII once a day
  - Group III: 2 g Glucosamine + 1.6 g Chondroitin
  - Group IV: UCII + Glucosamine + Chondroitin
- Treated once a day for 150 days
- No NSAID treatment 3 weeks before and during the course of the study
- Double blinded (investigators and owners)
- Clinical endpoints: overall pain (owner questionnaire), pain upon manipulation, exercise associated lameness.
- Objective evaluation by Ground Force Plate.

Results and Conclusions

- Excellent tolerance in every group: no adverse effects, no change in hepatic or renal blood parameters
- No change in the placebo group
- Clinical signs (including overall pain assessed by pet owner) were significantly improved from day 60 in Group II.
- GFP parameters exhibited a constant improvement, with significance reached from day 90.

Nutritional interventions to prevent and treat osteoarthritis. Part II: focus on micronutrients and supportive nutraceuticals. Lopez HL. PM R. 2012 May;4(5 Suppl):S155-68.


