the hepatoprotective effects of tryptanthrin. In conclusion, this study demonstrated that tryptanthrin protects hepatocytes against oxidative stress through the activation of the ERK/Nrf2 pathway in HepG2 cells.

More, M. et al. (2017). "A Rosa canina—Urtica dioica—Harpagophytum procumbens/zeyheri combination significantly reduces gonarthritis symptoms in a randomized, placebo-controlled double-blind study." *Planta Med* 83(18):1384–1391.

The special formulation MA212 (Rosaxan) is composed of rosehip (*Rosa canina* L.) puree/juice concentrate, nettle (*Urtica dioica* L.) leaf extract, and devil's claw (*Harpagophytum procumbens* DC. ex Meisn. or *Harpagophytum zeyheri* Decne.) root extract and also supplies vitamin D. It is a food for special medical purposes ([EU] No 609/2013) for the dietary management of pain in patients with gonarthritis. This 12 week randomized, placebo-controlled double-blind parallel-design study aimed to investigate the efficacy and safety of MA212 versus placebo in patients with gonarthritis. A 3D-HPLC-fingerprint (3-dimensional high-pressure liquid chromatography fingerprint) of MA212 demonstrated the presence of its herbal ingredients. Ninety-two randomized patients consumed 40 mL of MA212 ($n = 46$) or placebo ($n = 44$) daily. The Western Ontario and McMaster Universities Arthritis Index (WOMAC), quality-of-life scores at 0, 6, and 12 weeks, and analgesic consumption were documented. Statistically, the initial WOMAC subscores/scores did not differ between groups. During the study, their means significantly improved in both groups. The mean pre-post change of the WOMAC pain score (primary endpoint) was 29.87 in the MA212 group and 10.23 in the placebo group. The group difference demonstrated a significant superiority in favor of MA212 ($pU < 0.001$; $pt < 0.001$). Group comparisons of all WOMAC subscores/scores at 6 and 12 weeks reached same significances. Compared to placebo, both physical and mental quality of life significantly improved with MA212. There was a trend towards reduced analgesics consumption with MA212, compared to placebo. In the final efficacy evaluation, physicians ($pChi < 0.001$) and patients ($pChi < 0.001$) rated MA212 superior to placebo. MA212 was well tolerated. This study demonstrates excellent efficacy for MA212 in gonarthritis patients.

Patel, M. M. et al. (2013). "Method development for Lawsone estimation in Trichup herbal hair powder by high-performance thin layer chromatography." *J Adv Pharm Technol Res* 4(3):160–165.

A simple, specific, accurate, precise and robust high-performance thin-layer chromatographic method has been developed and validated for estimation of Lawsone in Trichup herbal hair powder (coded as a THHP), polyherbal formulation. The chromatographic development was carried out on aluminum plates pre-coated with silica gel 60F254 and good resolution was achieved with Toluene: Ethyl acetate: Glacial acetic acid (8:1:1 v/v/v) as mobile phase. Lawsone detection was carried out densitometrically at 277 nm and obtained retardation factor value was 0.46 ± 0.02. The method was validated with respect to specificity, linearity, accuracy, precision and robustness. The calibration curve was achieved to be linear over a range of 5–60 µg/mL and regression coefficient was obtained 0.998. Accuracy of chromatographic method was evaluated by standard addition method; recovery was obtained $99.25\% \pm 0.61\%$. The peak purity of Lawsone was achieved 0.999 r. Relative standard deviation for intraday and inter-day precision was 0.37%–0.56% and 0.42%–0.55%, respectively.