Publications Template

#	Research Title	Field	Abstract	Year of Publication Publishing	Publishing Link "URL"
1	Thymoquinone improves the kidney and liver changes induced by chronic cyclosporine A treatment and acute renal ischaemia/reperfusion in rats	Pharmacology & Experimental Therapeutics	**Objectives** This study was designed to evaluate the effects of chronic cyclosporine A (CsA) treatment and acute renal ischaemia/reperfusion (I/R) on the kidney and liver in thymoquinone (TQ)-treated rats. **Methods** In the CsA study, adult male rats were divided into control, CsA (25 mg/kg per day), TQ (10 mg/kg per day) and CsA + TQ groups, and rat treatment was for 28 days. In the I/R study, adult male rats were divided into sham-operated, I/R (renal ischaemia for 60 min followed by 60 min reperfusion) and TQ + I/R (TQ 10 mg/kg, 24 h and 1 h before ischaemia) groups. **Key findings** CsA treatment and renal I/R caused kidney and liver dysfunction as evaluated by histopathological changes and biochemical parameters. TQ treatment reduced elevated serum indices back to control levels and ameliorated CsA-induced kidney and liver histopathological changes. In renal and hepatic tissues, CsA and renal I/R induced significant increases in malondialdehyde levels with significant decreases in reduced glutathione levels and superoxide dismutase activities. Such changes in oxidative stress markers were counteracted by TQ treatment.	2015	https://doi.org/10.1111/jphp.12363

			Conclusions Kidney and liver injury due to CsA or renal I/R can be significantly reduced by TQ, which resets the oxidant/antioxidant balance of the affected organs through scavenging free radicals and antilipoperoxidative effects.		
2	Design of Targeted Flurbiprofen Biomimetic Nanoparticles for Management of Arthritis: In Vitro and In Vivo Appraisal	Pharmaceutics, Nonoformulation Pharmacology & Experimental Therapeutics	Flurbiprofen (FLUR) is a potent non-steroidal anti-inflammatory drug used for the management of arthritis. Unfortunately, its therapeutic effect is limited by its rapid clearance from the joints following intra-articular injection. To improve its therapeutic efficacy, hyaluronic acid-coated bovine serum albumin nanoparticles (HA-BSA NPs) were formulated and loaded with FLUR to achieve active drug targeting. NPs were prepared by a modified nano-emulsification technique and their HA coating was proven via turbidimetric assay. Physicochemical characterization of the selected HA-BSA NPs revealed entrapment efficiency of 90.12 ± 1.06%, particle size of 257.12 ± 2.54 nm, PDI of 0.25 ± 0.01, and zeta potential of −48 ± 3 mv. The selected formulation showed in-vitro extended-release profile up to 6 days. In-vivo studies on adjuvant-induced arthritis rat model exhibited a significant reduction in joint swelling after intra-articular administration of FLUR-loaded HA-BSA NPs. Additionally, there was a significant reduction in CRP level in blood as well as TNF-α, and IL-6 levels in serum and joint tissues. Immunohistochemical study indicated a significant decrease in iNOS level in joint tissues. Histopathological analysis confirmed the safety of FLUR-loaded HA-BSA NPs. Thus, our results reveal that FLUR	2022	https://doi.org/10.3390/pharmaceutics14010140

			loaded HA-BSA NPs have a promising therapeutic effect in the management of arthritis.		
3	The gastroprotective effect of Yucca filamentosa standardized crude leaves extract versus its nano-cubosomal formulation in ethanol-induced gastric injury	Pharmacology & Experimental Therapeutics Natural Compound characterization Phytochemistry	Yucca filamentosa (YF) is widely used in folk medicine for its anti-inflammatory effects. Our study aimed to evaluate the chemical profile of YF extracts. Additionally, the gastroprotective efficacy of its crude leaf extract and nano-cubosomal formulation was assessed in a rat model of ethanol-induced gastric injury by altering the HMGB-1/RAGE/TLR4/NF-κB pathway. The phytochemical composition of YF was investigated using FTIR spectroscopy and LC-MS/MS techniques. Standardization was further accomplished using HPLC. Rats were treated orally with yucca crude extract or its nano-cubosomal formulation at doses of 25, 50, and 100 mg/kg. Famotidine (50 mg/kg, IP) was used as a reference drug. After 1 h, rats were administered ethanol (1 ml, 95 %, orally). One hour later, the rats were sacrificed, and the serum was separated to determine TNF-α and IL-6 levels. Stomachs were excised for the calculation of the ulcer index and histopathological examinations. Stomach tissue homogenate was used to determine MDA and catalase levels. Additionally, the expression levels of HMGB1/RAGE/TLR4/NF-κB were assessed. Phytochemical analysis confirmed the predominance of steroidal saponins, sucrose, organic and phenolic acids, and kaempferol. The nano-cubosomal formulation demonstrated enhanced gastroprotective, anti-oxidant, and anti-inflammatory efficacy compared to the crude extract at all tested doses. The most prominent effect was	2024	https://doi.org/10.1016/j.intimp.2024.112440

			observed in rats pretreated with the YF nano-cubosomal formulation at a dose of 100 mg/kg, which was similar to normal control and famotidine-treated rats. Our results highlighted the enhanced gastroprotective impact of the yucca nano-cubosomal formulation in a dose-dependent manner. This suggests its potential use in preventing peptic ulcer recurrence.		
	Targeted non-invasive Metformin-Curcumin co-loaded nanohyaluosomes halt osteoarthritis progression and improve articular cartilage structure: A preclinical study	Pharmacology & Experimental Therapeutics Pharmaceutics, Nonoformulation	Osteoarthritis (OA) is a degenerative disease that affects the quality of life in elderly and young populations. Current therapies using corticosteroids and non-steroidal anti-inflammatory drugs via parenteral or oral routes show limited ability to retard progression of the disease and achieve long term effectiveness and safety. Herein, the potential of MT-Cur combinatorial nano-formulations in OA management was explored for the first time. MTCur loaded nanohyaluosomes (MT-Cur-HL1) were designed for topical administration of the combined therapy in OA. The optimized MT-Cur-HL1 showed particle size 247.7 ± 3.7 nm, zeta potential □ 37.3 ± 0.4 mV; and entrapment efficiency (%EE) 70.22 %±0.303 and 76.7 %±0.077 for MT and Cur, respectively. MT-Cur-HL1 exhibited sustained drug release over 24 h and were stable over 3 months at 4 ◦C in terms of P.S., ZP and %EE. A detailed preclinical study, using MIA-induced osteoarthritis rat model, revealed the most significant anti-arthritic effect and halted OA progression of MT-Cur-HL1. This was proved to be mainly through the potentiation of p-AMPK signaling that ultimately led to suppression of its downstream TLR4/ NF-κB signaling pathway with subsequent reduction in MMP13 and ADAMTS5 induced chondrocytes degeneration. This	2024	https://doi.org/10.1016/j.ijpharm.2024.124845

			study proved that this trajectory effectively promotes a significant improvement in the articular cartilage structure and reinforcement of joint mobility with an efficient antinociceptive effect. In conclusion, the novel MT-Cur coloaded nanohyaluosomes offer a promising non-invasive approach for the local management of OA.		