

# GARCINIA CAMBOGIA MODULATES CIPROFLOXACIN-INDUCED TESTICULAR HISOPATHOLOGY THROUGH REGULATORY EFFECTS ON THE PITUITARY HORMONES

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## OBJECTIVES

The objectives of this study were to:  
(i) study the effect of treatment on relative organ weights as indication of inflammation;  
(ii) evaluate the effects of Ciprofloxacin and *Garcinia cambogia* on the histology of the testis;  
(iii) evaluate the effects of Ciprofloxacin and *Garcinia cambogia* (GC) on the male reproductive hormones [Testosterone, Follicle stimulating hormone (FSH) and Luteinizing hormone (LH)].

## METHODS

Adult male Wistar rats were randomly divided into four groups. Group A received Ciprofloxacin 150 mg/kg b.w, Group B was given Ciprofloxacin 150 mg/kg bw +GC (400 mg/kg b.w), Group C received GC only (400 mg/kg b.w) and Group D had 1.5 ml distilled water (placebo). Administration lasted for 30 days after which animals were sacrificed. Blood samples were obtained for hormonal studies and the testes harvested for histological studies. Plasma FSH, LH and testosterone was determined by enzyme-linked immunosorbent assay (ELISA) using commercial kits (Accu bind, USA). Absorbance was read at 450 nm using a microplate reader (Rayto-2100c, Germany).

## GRAPHS AND TABLES

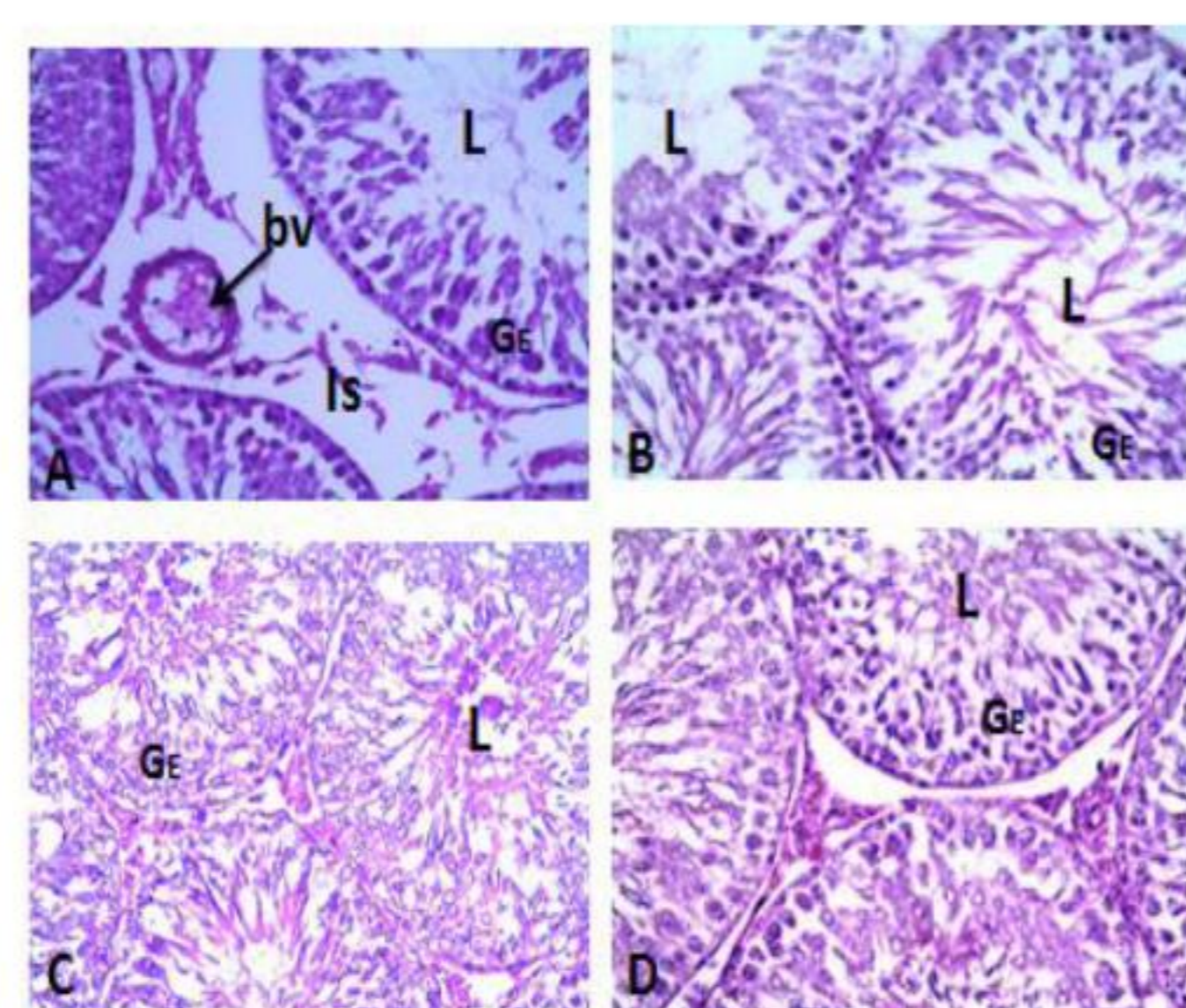
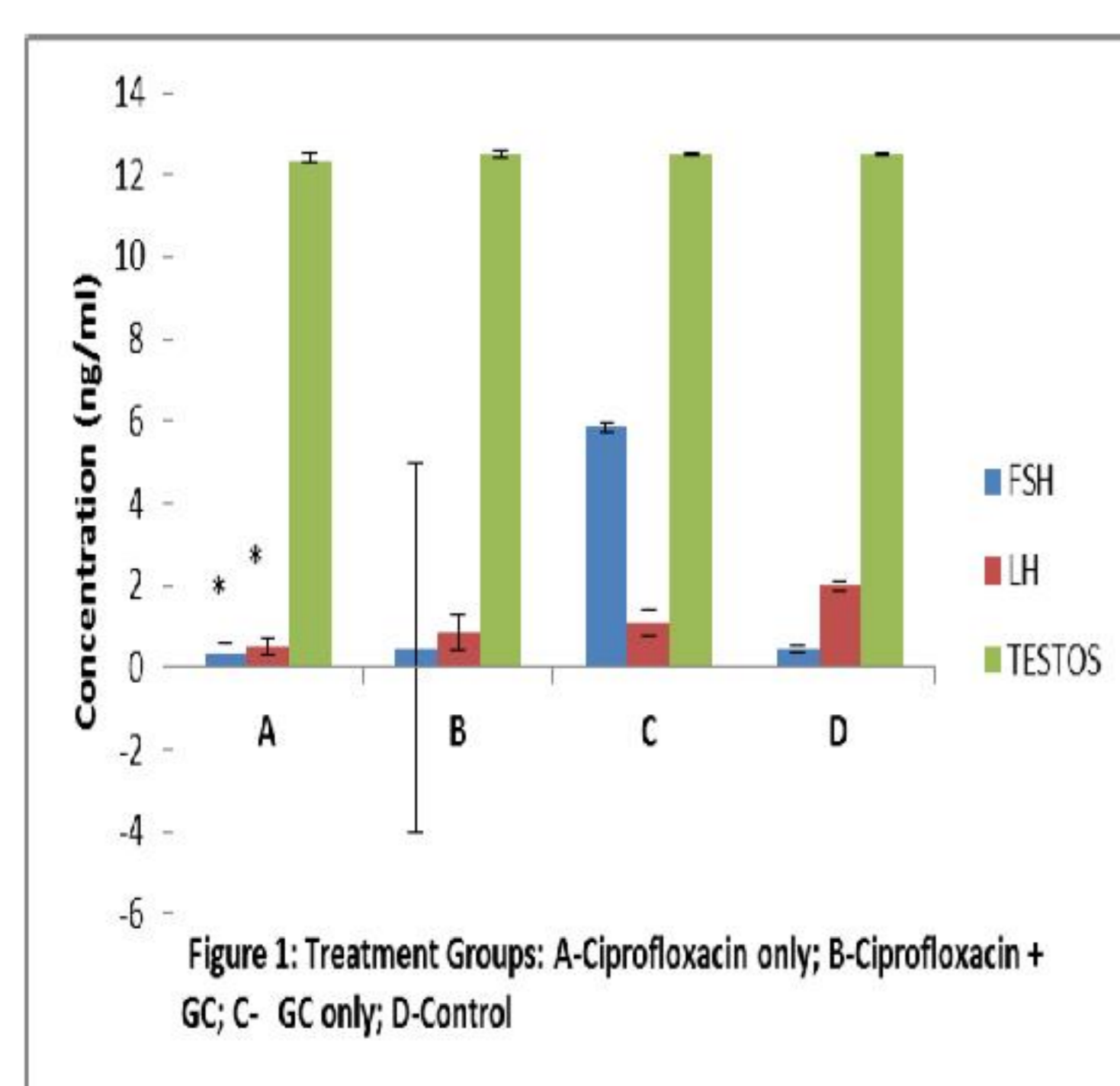


FIGURE 2: Cross-sections of seminiferous tubules of A (Ciprofloxacin only); B (Ciprofloxacin + GC); C (GC Only); D (Control) rats. Observe the widened interstitial space, Is, in A. Is= Interstitial space; Bv= congested blood vessel; L= tubular lumen; GE= Germinal epithelium

## RESULTS

Results showed that the concentration of FSH and LH in the GC-treated group and control group were significantly higher than in the ciprofloxacin-treated group at  $P < 0.05$ . The concentration of testosterone in the ciprofloxacin only group was significantly lower at  $P < 0.05$  compared to other groups.

The testicular histology of the ciprofloxacin-treated group revealed widened interstitial space, irregular seminiferous tubules, disrupted connective tissue and congested blood vessels. These histopathological features were not seen in the GC-treated group; their histologies appeared normal.

## CONCLUSIONS

This study corroborated the spermatogenic effects of GC extract in male rats as previously reported in literature (Oluyemi et al., 2007). Rapid spermiogenesis and increased testosterone concentration might be due to the antioxidants in GC (Akpanatah et al., 2003). Results also showed that ciprofloxacin had a toxic impact in the testis of rats as evidenced by decreased concentration of reproductive hormones (FSH, LH and Testosterone) and histopathological alterations.

## References

1. Akpanatah AO, Oremosu AA, Ajala MO, Norohna CC, Okanlawon AO (2003). The effect of crude extract of *Garcinia kola* on the histology and hormonal milieu of male Sprague-Dawley rats' reproductive organs. *Niger. J. Health Biomed. Sci.* 2(1): 40-46.
2. Oluyemi KA, Omotuyi IO, Jimoh OR, Adesanya OA, Saalu CL, Josiah SJ, Oyesola TO (2007). Effects of crude extract of *Garcinia cambogia* on the reproductive system of male wistar rats. *African Journal of Biotechnology.* 2 (10):1236-1238.

