

## Chemoprevention of Tunisian montmorillonite clay against hyperoestrogenicity and genotoxicity of Zearalenone in male rats

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In the present study, we evaluated the chemopreventive effects of purified Tunisian montmorillonite clay (TMC) against the clastogenicity and reproductive damage of ZEN. 70 mature male rats were randomly assigned to seven experimental groups of twelve rats each including the control group, olive oil group, the groups treated with TMC alone (200, 400 and 600 mg/kg b.w), the group treated with ZEN (25 µg/kg b.w) and the group treated with ZEN plus the lowest dose of TMC (200 mg/ml). Animals of each group were divided into two subgroups (A and B). Subgroup A was used for the determination of body and testicular weights, serum testosterone levels and cell germ clastogenicity. It received their respective doses for ten days whereas, subgroup B were used for sperm abnormality and received their respective doses twice a day for 5 days and the experiment was terminated after two weeks. The results indicated that ZEN treatment resulted in a significant decrease in testosterone concentration, body gain and testicular weight, sperm count and sperm motility. Whereas it caused a significant reduction in abnormal sperms counts and total chromosomal aberrations in germ cells. Animals treated with TMC alone were comparable to the controls regarding all the tested parameters. The combined treatment with ZEN and TMC resulted in a significant amelioration in all tested parameters.

In conclusion, TMC sorbent is effective to reduce the bioavailability of ZEN in the gastrointestinal tract. by itself, did not show any toxic effect in the reproductive performance.

Key words: Zearalenone, TMC, clastogenicity, germ cells, testis, testosterone, rats.