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JOURNAL ARTICLE

Triptolide: a potential male contraceptive

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The antifertility effect of triptolide and other related compounds, isolated from *Tripterygium wilfordii*, has been demonstrated in male rats. The exact sites and mechanism of action of triptolide remain unknown. Our objectives were to determine whether triptolide at selected dose levels that induce infertility has any detrimental effects on the testes and to determine the sites and the possible mechanisms of its action. Groups of six adult male Sprague-Dawley rats were given oral administration of either vehicle (control group) or triptolide (50 or 100 microg/kg body weight) daily for 35 or 70 days. Body weight gain was normal in all treated groups. All six rats treated with a high dosage of triptolide were infertile during the second (63-70 days) mating trial. A lower dose (50 microg) of triptolide gave intermediate fertility values. Plasma levels of luteinizing hormone, follicle-stimulating hormone, testosterone, and intratesticular testosterone were not significantly different between control and triptolide-treated groups. Cauda epididymal sperm content was decreased by 68% and the motility, which averaged 58.2% in the control rat, was reduced to almost zero. No effects of triptolide were observed on testis and accessory organs weight, volumes of tubular lumen and the total Leydig cells, tubule diameter, and the number of Sertoli cells, spermatogonia, preleptotene (PL), and pachytene (P) spermatocytes. There were, however, modest but significant decreases in tubule volume and the number of round spermatids at stages VII-VIII. No changes in the germ cell apoptotic index measured at stages VII-VIII and XIV-I were noted between controls and rats rendered infertile with a high dose of triptolide. Thus, triptolide, at a dose level that induces complete infertility in the adult rats, has minimal adverse effects on the testes and acts primarily on the epididymal sperm making triptolide an attractive lead as a post-testicular male contraceptive.

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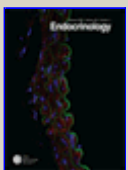


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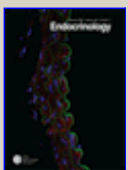
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