

Pharmacological Evaluation of a Novel Herbal Formulation on Testosterone Biosynthesis and Accessory Sex Organ Development in Experimental Rats

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SUMMARY. Testosterone deficiency and male hypogonadism are increasingly recognized as major health concerns associated with hormonal imbalance, oxidative stress, and reduced reproductive function. To explore safer and more effective alternatives to conventional androgen therapy, this study investigated the androgenic potential of *CmPG01*, a novel herbal formulation composed of standardized extracts of *Cordyceps militaris* (75%), *Panax ginseng* (5%), and *Ganoderma lucidum* (5%). The preparation was evaluated in both normal immature male rats and castrated rats using serum testosterone and total protein levels, together with the relative weights of secondary sex organs including seminal vesicles, testes, epididymides, prostates, and levator ani-bulbocavernosus muscles. *CmPG01* at 528 mg/kg/day for ten days significantly increased seminal vesicle weight by 17.2% and serum testosterone by 90.8% compared with the physiological control ($p < 0.01$). These findings suggest that *CmPG01* enhances endogenous androgen synthesis and may serve as a promising natural approach to improving male reproductive health and vitality.

RESUMEN. La deficiencia de testosterona y el hipogonadismo masculino se reconocen cada vez más como importantes problemas de salud asociados con el desequilibrio hormonal, el estrés oxidativo y la reducción de la función reproductiva. Para explorar alternativas más seguras y efectivas a la terapia androgénica convencional, este estudio investigó el potencial androgénico de *CmPG01*, una novedosa formulación herbal compuesta por extractos estandarizados de *Cordyceps militaris* (75%), *Panax ginseng* (5%) y *Ganoderma lucidum* (5%). La preparación se evaluó tanto en ratas macho inmaduras normales como en ratas castradas, utilizando los niveles séricos de testosterona y proteína total, junto con el peso relativo de los órganos sexuales secundarios, incluyendo vesículas seminales, testículos, epidídimos, próstatas y músculos elevador del ano-bulbocavernoso. *CmPG01* a 528 mg/kg/día durante diez días aumentó significativamente el peso de las vesículas seminales en un 17,2% y la testosterona sérica en un 90,8% en comparación con el control fisiológico ($p < 0,01$). Estos hallazgos sugieren que *CmPG01* mejora la síntesis de andrógenos endógenos y puede servir como un enfoque natural prometedor para mejorar la salud reproductiva y la vitalidad masculina.

KEYWORDS: androgenic activity, *Cordyceps militaris*, *Ganoderma lucidum*, herbal formulation, male reproductive function, *Panax ginseng*.

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