

Stimulatory effect of the extract of fruit body of *Cordyceps militaris* on the secretion of testosterone in rats

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Testosterone, primarily produced in Leydig cells, is essential for a variety of systemic functions, and deficiency of this hormone results in late-onset hypogonadism (LOH) in climacteric male. In the present study, we prepared the extract of fruit body of *Cordyceps militaris* parasitized in *Samia Cynthia ricini*, designated as Ryukyu-Kasou (RK), as a novel candidate for ameliorating male menopause symptom. To explore the effect of RK on LOH, we have investigated the testosterone dynamics using castrated rats and isolated primary rat Leydig cells. Testosterone propionate (TP) and the extract of RK were administered to castrated rats for 12 days. The serum levels of testosterone and dihydrotestosterone (DHT) were maintained highly in the RK-treated group, compared with control. In addition, RK reduced TP-stimulated increases in the weight of prostate gland. When cultured testicular cells were stimulated with luteinizing hormone (LH) or dibutyryl-cyclic AMP (cAMP) in the presence or absence of RK, LH- or cAMP-induced testosterone secretion in the media was enhanced by the presence of RK with no changes in the mRNA expression of steroidogenic enzymes. Thus, RK-derived unknown compounds suppressed the testosterone catabolism *in vivo* and stimulated testosterone secretion *in vitro*, suggesting the possibility of RK for improving LOH.