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Dietary supplement with a combination of *Rhodiola crenulata* and *Ginkgo biloba* enhances the endurance performance in healthy volunteers.

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Abstract

OBJECTIVE: To determine whether the ingestion of a herbal supplement called **Rhodiola-Ginkgo Capsule (RGC)** would enhance the endurance performance of healthy volunteers and change relevant hormones in a favorable manner.

METHODS: Seventy healthy male volunteers (age ranges from 18 to 22 years old) were randomly assigned to RGC group (35 cases, each capsule containing 270 mg herbal extracts, 4 capsules per day) or placebo group (35 cases, equivalent placebo preparation) for 7 weeks using computer produced digital random method. The endurance performance, serum testosterone and cortisol levels were measured at the baseline and the endpoint.

RESULTS: Sixty-seven subjects (34 in the RGC group and 33 in the placebo group) completed a 7-week treatment. The RGC group displayed a significantly greater baseline-to endpoint increase in maximal oxygen uptake (VO_{2max}) than placebo group in both absolute ($P=0.020$) and relative values ($P=0.023$). At the endpoint, the serum cortisol level was unchanged in the RGC group compared with the baseline, but it was significantly elevated in the placebo group ($P<0.05$). The endpoint ratio of testosterone to cortisol, a surrogate for overtraining and fatigue in endurance exercises, was also indifferent compared with the baseline in the RGC group, but significantly decreased in the placebo group ($P<0.05$).

CONCLUSION: The combined herbal supplement of **Rhodiola** and *Ginkgo* could improve the endurance performance by increasing oxygen consumption and protecting against fatigue.

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Publication Types, MeSH Terms, Substances

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