烏龍茶對於衰竭運動後引起老鼠氧化壓力之保護

謝錦城,王宏豪,陳洸艟,林添鴻,劉介仲
體育室
人文社會學院
hung@chu.edu.tw

摘要

The purpose of this study was to investigate the exhaustive exercise-induced oxidative stress
and the protective effect of oolong tea supplementation on malondialdehyde (MDA) levels,
superoxide dismutase (SOD) and glutathione peroxidase (GPx) activities in rat gastrocnemius
muscle. Thirty-two male Sprague-Dawley rats were randomly divided into the following four
groups: 1. control (C, n=8), 2. exhaustive exercise (CE, n=8), 3. oolong tea(O, n=8), 4.
oolong tea-exhaustive exercise (OE, n=8). The amount of oolong tea extract supplementation
was 0.5 g/kg bodyweight per day for 4 weeks. The exhaustive exercise started at 10% grade,
15 m min-1 for 10 min followed by gradual increases of treadmill speed and times until
exhaustion. Two-way ANOVA was performed to examine the effects of exhaustive exercise and
oolong tea supplementation on MDA, SOD, and GPx activities. The results showed that
exercise-induced MDA levels were significantly higher than non-exercised rats ($p<.05$), while
MDA in OE group were significant lower than CE group ($p<.05$). Muscle SOD activities in
exercised rats were higher than non-exercised rats ($p<.05$). Oolong tea supplemented rats also
have higher SOD activities than non-oolong tea supplemented rats ($p<.05$). Moreover, GPx

activities in exhaustive exercised rats were significantly higher than non-exercised rats
(p<.05), while GPx activities in oolong tea supplemented rats were significantly higher than
non-oolong tea supplemented rats (p<.05). It is concluded that exhaustive exercise could
result in oxidative stress. However, oolong tea supplementation is beneficial to decrease
oxidative stress and increase the antioxidant status.

關鍵字：malondialdehyde, superoxide dismutase, glutathione peroxidase