Combined effects beta-hydroxy-beta-methylbutyrate (HMB) supplementation and exercise training on body composition, blood lipids and muscle damage in active men

Autor(es): Guzel, Yasmin; Camur, K.; Kamuk, U.; Turnagol, H.
Publicado por: Imprensa da Universidade de Coimbra
URL persistente: URI:http://hdl.handle.net/10316.2/28419
DOI: DOI:http://dx.doi.org/10.14195/2182-7087_4_18


Conforme exposto nos referidos Termos e Condições de Uso, o descarregamento de títulos de acesso restrito requer uma licença válida de autorização devendo o utilizador aceder ao(s) documento(s) a partir de um endereço de IP da instituição detentora da supramencionada licença.

Ao utilizador é apenas permitido o descarregamento para uso pessoal, pelo que o emprego do(s) título(s) descarregado(s) para outro fim, designadamente comercial, carece de autorização do respetivo autor ou editor da obra.

Na medida em que todas as obras da UC Digitalis se encontram protegidas pelo Código do Direito de Autor e Direitos Conexos e demais legislação aplicável, toda a cópia, parcial ou total, deste documento, nos casos em que é legalmente admitida, deverá conter ou fazer-se acompanhar por este aviso.
COMBINED EFFECTS BETA-HYDROXY-BETA-METHYLBUTYRATE (HMB) SUPPLEMENTATION AND EXERCISE TRAINING ON BODY COMPOSITION, BLOOD LIPIDS AND MUSCLE DAMAGE IN ACTIVE MEN
Yasmin Guzel1, K. Camur2, U. Kamuk2, H. Turnagol1

BACKGROUND AND PURPOSE

HMB is a metabolite of leucine aminoacid which exerts its effect via different biochemical mechanisms (1). HMB has been shown to stimulate protein synthesis via mTOR pathway, inhibit protein degradation, affect body composition change (reducing body fat gain while enhancing lean body mass gain) in animals and humans and prevent muscle damage (2, 3). However, the effect of combined HMB supplementation and exercise training on body composition, blood lipids and muscle damage in humans are still under debate (1, 2, 3). Hence, the purpose of this study is to investigate the effects of HMB supplementation with exercise on body composition, blood lipid profile and markers of muscle damage. The subjects of the study were 17 physically active male volunteers (age 26.9 ± 2.01 years, height 177.15 ± 4.43 cm, weight 78.4 ± 10.7 kg and BMI 24.9 ± 3.19 kg/m²).

METHODS

This study was performed in a double blind placebo controlled design. Subjects were divided into two groups (HMB+Exercise and Placebo+Exercise). HMB+Exercise and Placebo+Exercise groups took daily 3 gr HMB or 3 gr placebo for 14 days. Subjects in both groups participated in a training program including strength and endurance exercises, 5 times a week and each season lasted for 100-120 minutes. Food intake, body composition, blood lipid profile and muscle damage markers measured before and after the trial.

RESULTS

After the study, total body water (%) and body fat mass decreased significantly in both groups (p<0.05). Significant increase in lean body mass and decrease in waist/hip ratio were found in HMB+Exercise group. No change in blood lipid profile and muscle damage markers with HMB supplementation was observed. Further studies with different exercise intensity, volume, frequency and longer HMB supplementation are required.

1 Hacettepe University, School of Sport Sciences and Technology, Beytepe, Ankara, Turkey.
2 Turkish Armed Forces, Sport School and Education Centre, Ankara, Turkey
REFERENCES

