The Effect of New Zealand Blackcurrant supplementation on Recovery from Muscle Damage Induced by Drop Jumps

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New Zealand blackcurrant (NZBC) is a rich source of anthocyanins, which improve blood flow and display anti-inflammatory and antioxidant properties that may improve recovery from exercise-induced muscle damage (EIMD). Limited evidence is available as to whether anthocyanin supplements can aid recovery in the days following muscle damaging exercise. The aim of this study was to examine if NZBC extract improves recovery following muscle damaging exercise. Following a double-blind, repeated crossover design, 12 recreationally active males (mean ± SD: age 29 ± 6 years, stature 1.80 ± 0.07 m, body mass 78.0 ± 10.7 kg, Σ of 4 skinfolds 35.65 ± 12.30 mm, maximal voluntary isometric contraction (MVIC) baseline 497 ± 120 N) ingested either 2 x 300 mg·day^{-1} capsules with a NZBC extract (CurraNZ™; each containing 105 mg anthocyanin) or a visually matched placebo (PLA) 7-days prior and 3-days after completing a 100-drop jump protocol (100-DJP). Measures of MVIC, electrically stimulated (ES) contractions, countermovement jumps (CMJ), perceived muscle soreness (visual analogue scale), serum interleukin-6 (IL-6) and prostaglandin-E_2 (PGE_2) were made pre- (baseline), immediately-, 24-, 48- and 72 h-post the 100-DJP. MVIC, ES, CMJ and muscle soreness variables were analysed using a mixed model ANOVA with significance set at $p<0.05$. MVIC peak force was reduced immediately-post 100-DJP, compared to baseline (NZBC: 90±10; PLA: 93±11 %; $P=0.001$, $\eta p^2=0.320$), but returned to baseline at 24 h with no difference between groups ($P=0.940$). ES doublet peak force was reduced compared to baseline immediately- 24-, 48- and 72 h-post ($P<0.001$) with no difference between groups ($P=0.798$). Perceived muscle soreness increased immediately-post (NZBC: 4±2; PLA: 3±1, $P=0.0001$, $\eta p^2=0.417$), but returned to baseline by 72 h-post, with no difference between groups ($P=0.404$). PGE2 declined immediately-post compared to baseline ($P=0.009$, $\eta p^2 = 0.225$) and returned to baseline by 72 h in both groups ($P=0.565$). CMJ and IL-6 were unaffected by the 100-DJP or NZBC extract ($P>0.05$). In conclusion, the NZBC extract did not accelerate recovery of MVIC or ES doublet peak force, perceptions of muscle soreness or inflammation following muscle damaging exercise in recreationally active males and large inter-individual variation in responses were present.