

Effects of acute supplementation of panax ginseng on hydration status during  
endurance running exercise in a hot and humid environment

ABSTRACT

Background & objectives: Athletes in Malaysia need to perform in a hot and humid environment due to the climatic nature of the country. chronic supplementation of Panax ginseng (PG) (a deciduous perennial plant belonging to the Araliaceae family) enhances physical performance. As the ergogenic effect of acute supplementation of PG on endurance performance has not been explored in the Malaysian population especially in a hot and humid condition this study was taken up. Methods: Nine heat adapted recreational runners (age :  $25.4 \pm 6.9$  yr, body mass :  $57.6 \pm 8.4$  kg; body height :  $168.3 \pm 7.6$  cm) were recruited in this placebo-controlled double-blind randomized study. Subjects ingested 200 mg of PG one hour before the exercise test on treadmill at 70 per cent of their VO<sub>2</sub>max in a laboratory environment of 31o C and 70 per cent relative humidity. They drank 3 ml/kg body weight of cool water every 20 min during the exercise to prevent adverse effects of dehydration. Blood samples were drawn every 20 min for the analysis of glucose, lactate, insulin and free fatty acids. Oxygen uptake was determined every 20 min while heart rate, body and skin temperatures, and ratings of perceived exertion (RPE) were recorded every 10 min during the trials. Results: Endurance running time to exhaustion did not differ between PG and placebo trials. Heart rate, skin temperature, core body temperature, oxygen uptake, RPE, plasma insulin, glucose, free fatty acid and lactate levels during the endurance exercise did not show any significant differences between the trials. Interpretation & conclusions : We conclude that acute supplementation of 200 mg of PG did not affect the endurance running performance of the heat-adapted male recreational runners in the heat.