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Effects of sports drink including *Prunus mume* extract and
Schisandra chinensis fruit extract on Endurance
Exercise Performance in Rats

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It is well known that athletes use anabolic steroids and amphetamines in order to enhance their performance. Alternatively, if an athlete manages to reduce his body weight by a small amount each day, he may be able to compete in a lower body weight category, increasing his chances of winning. Many athletes are realizing that apart from being illegal, many of these substances are harmful to health and they are therefore turning to more natural products to enhance performance. And also many of the people are drinking multiple energy drinks a day, but anybody don't know what their components have done for energy metabolism and endurance performance. Thus this study was undertaken to investigate the effects of *Prunus mume* extract and *Schisandra chinensis* fruit extract containing electrolyte beverages on endurance performance of trained rats. Rats were tested on the treadmill running and the endurance swimming capacity after drinking sample beverages for 4 weeks. Rats drunk the beverage with *Prunus mume* extract and *Schisandra chinensis* fruit extract containing electrolyte were able to run and swim longer than those drunk the beverage with both extract containing saline.

Keyword : Endurance performance, *Prunus mume*, *Schisandra chinensis*

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Characterization of Alginate lyase Produced by *Streptomyces sp.* G-5

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An alginate lyase-degrading marine bacterium, strain G-5 was isolated from green seaweed, using M9 alginate plate. Strain G-5 produced both intracellular and extracellular alginate lyase, and grew utilizing sodium alginate in the culture medium as sole carbon source. The subsequent BLAST analysis on sequence similarity of 16S rDNA and the phylogeny analysis indicated that the closest relatives of the strain G-5 were *Streptomyces badius* and *Streptomyces parvus*. We characterized the optimum condition for the cell growth and alginate lyase production of *Streptomyces sp.* G-5. 0.2% sodium alginate content in marine broth was appropriate as culture media for the cell growth. The effects of temperature, pH and metal ions on the extracellular alginate lyase activity were investigated. The substrate specificity and stability of extracellular alginate lyase were also tested for sodium alginate, polymannuronate, polyguluronate and agarose. This work was supported by the Marine and Extreme Genome Research Center Program, Ministry of Marine Affairs and Fisheries, Republic of Korea.

Keywords : Extracellular alginate lyase, *Streptomyces sp.* mannuronate and guluronate