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The Effect of Sport Drink 'DUO-MAX' on Cardiorespiratory Functions, Excercise Performance and Blood Lactate of Swimmers

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The subjects recruited for this study were 28 people composed of 8 male university swimmers, 10 ordinary group and 10 comparison group. This study was carried out in order to investigate the effects of Omija, Maesil and Molasses in isotonic drink as a sports drink on the cardiorespiratory functions and blood lactate level. The sports drink was made of 1% Omija, 0.08% Maesil extract, 0.4% Molass in the isotonic drink (6% carbohydrate and electrolytes). The 8 swimmers and ordinary group were forced to drink 3 bottles containing 340 ml per day for 4 weeks but time to drink was free. Before and after 4 weeks, body composition, cardiorespiratory function and blood lactate level was measured and Duncan's approvement was operated by analyzing of variance ANOVA and Clause's statistics. For the body composition, lean body masses of ordinary group and swimmer's group were increased significantly as ($p<.05$) but comparison group was not. And the part of cardiorespiratory functions, HRrst, VO2max, AnT and exercise time were highly increased as well ($p<.001$). When the blood were withdrawn right after excercise or after taking 20 minute rest, blood lactate levels of athlete's group and dinary group were significantly lower than control group. The results of this study shows that sports drink which composes of *Omija*, *Maesil* and *Molasses* in isotonic drink has a positive effect to improve the cardiorespiratory function in athletes and ordinary people. **Acknowledgement** : This work was supported by the 2008 Busan TechnoPark program (BTP) and Human Resource Training Project for Strategic Technology.

Key words: Duo-Max, Molasses, *Maesil*, *Omija,* cardiorespiratory, blood lactate

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Concentration and Congener Distribution of Dioxin-like PCBs, Marker PCBs from Human Breast Milk in Ansan, Korea

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Dioxin-like PCBs are often designated as "dioxin-like compounds" because of similarities in structure and biological properties and marker PCBs was known to organism accumulation were higher than other PCBs congeners. In this study, dioxin-like PCBs and marker PCBs compounds were measured in colostrum, 30th, 60th breast milk collected in 2007 from 22 mothers who were selected from Ansan, Korea and we determined level of breast milk samples and congener distribution. Concentration of dioxin-like PCBs was 2.53 pg-TEQ/g in colostrum, 2.30 pg-TEQ/g in 30th, 2.00 pg-TEQ/g in 60th and marker PCBs was colostrum 13.41 ng/g, 30th 11.38 ng/g, 60th 10.19 ng/g in human milk samples for Ansan, Korea. The predominant congener in dioxin-like PCBs 3,3',4,4',5-PeCB (#126) was 64.4%, followed by 2,3,3',4,4',5-HxCB (#156), 2,3,3',4,4',5-PeCB (#118) was 14.1%, 8.7%, respectively, and this tendency was very similar to the those reported in previously studies. In marker PCBs, which was 2,2,'4,4',5,5'-HxCB (#153) 28.7%, 2,2,'3,4,4',5-HxCB (# 138) 20.8%, 2,2,'3,4,4',5,5'-HpCB (# 180) 19.9%, respectively, they accounted for more than 69.4% of the total TEQ.

Key words: Dioxin-like PCBs, Marker PCBs, Human milk, Ansan