

[*Antimicrob. Agents Chemother.*, 42, 3136-3140 (1998)]

[Lab. of Clin. Pharmacol. Ther.]

**Possible Mechanism by Which the Carbapenem Antibiotic Panipenem  
Decreases the Concentration of Valproic Acid in Plasma in Rats.**

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The mechanism for panipenem (PIPM)-induced changes in pharmacokinetics of VPA was investigated in rats with and without bile duct cannulation (BDC). The effect of PIPM on the pharmacokinetics of diclofenac (DF), which undergoes enterohepatic recirculation, was also examined. VPA (50mg/kg) or DF (10 mg/kg) was administered intravenously under the steady-state plasma PIPM concentration of 4 µg/ml. PIPM decreased the plasma VPA concentrations in rats without BDC, but had no effect on the plasma concentrations and the biliary excretion of VPA in rats with BDC. The secondary increase in plasma DF concentration observed in the absence of PIPM was diminished in the presence of PIPM. These findings suggest that PIPM suppresses enterohepatic recirculation of VPA, probably due to a PIPM-induced decrease in the numbers of enteric bacteria.

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[Lab. of Health and Physical Education]

**Effects of Dietary Supplement (MD-97) on Weight Decrease**

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The present study focused on weight decrease of women belonging to a fitness club who took a dietary supplement (MD-97) daily for eight weeks. All women participating in the study had lost weight after eight weeks. The average decrease was 3.2kg, 89% of this being accounted for by reduce body fat. No remarkable change in body function between before and after the trial was found. No change in blood and urine biochemical parameters was observed between before and after the trial indicating dietary supplement (MD-97) to be safe. Exercise was necessary for decrease in body weight and body fat, in addition to the dietary supplement (MD-97). These results indicated that exercise requires should be adopted for weight decrease and that dietary supplement (MD-97) is an effective and healthy choice as an adjunction measure.

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[Lab. of Health and Physical Education]

**Modifying Effects of Maharishi Amrit Kalash 4 and 5 on Phagocytic and  
Digestive Functions of Macrophages in Male ICR Mice.**

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A study carried out to examine modifying effects of Maharishi Amrit Kalash 4 (MAK 4) and 5 (MAK 5) on phagocytic and digestive functions of macrophages in male ICR mice. MAK 4 and MAK 5 were given p.o. at 50 mg/kg per day (5 days/week) for 7 week. Phagocytic function of reticuloendothelial system evaluated by carbon clearance was enhanced by the treatment of MAK 4 and MAK 5. O<sub>2</sub><sup>-</sup> production of peritoneal macrophages increased significantly in both MAK 4 and MAK 5. The acid phosphatase activity of peritoneal macrophages increased significantly in MAK 4 group compared to the control group, but not in MAK 5 group. The activity of β-glucuronidase and lactate dehydrogenase in both MAK 4 and MAK 5 groups increased significantly when compared to the control group. These results suggest that MAK 4 and MAK 5 promote the phagocytic and digestive functions of macrophages and have a stimulatory effect on macrophages.

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[Lab. of Health and Physical Education]

**Effects of Different Frequency of Exercise on Macrophage Functions and  
Lymphocyte Proliferation in Mice.**

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The purpose of the present study was to investigate the effects of different frequency of exercise on macrophage functions and lymphocyte proliferation in mice. Male ICR mice aged 4 weeks were divided into four groups: a non-exercise group (control), once a week exercise group (E1), 3 times per week exercise group (E3) and 5 times per week exercise group (E5). The exercise applied was forced running at 13 m/min on a flat floor without any slope for 60 min a day for 12 weeks. As the results, carbon clearance, glucose consumption capacity, O<sub>2</sub><sup>-</sup> production capacity, lysosome enzyme activity of peritoneal macrophages in the E3 and E5 groups were significantly higher than those in the control group. The proliferation of splenocytes induced by Con A in the E5 group was significantly increased compared to that in the control group. These results suggest that forced running exercise for at least 3 times per week might improve not only macrophage function but also lymphocyte responsiveness and thereby improve the host defense mechanisms in mice.