

## **【P3-26】**

### Dietary Supplementation of Lycopene and Immune Function in Mice

Ji-Young Kim, Jung-Hee Kim, Hye-Yeon Lee, Ji-Young Lee and Hyun-Sook Kim

*Major in Food and Nutrition, Sookmyung Women's University*

Lycopene is the predominant carotenoid in tomatoes and tomato-based foods. This pigment has been reported to act as an antioxidant and scavenger of free radicals. In study 1, we analyzed the concentration of lycopene in rat liver and plasma by HPLC after dietary supplementation of either freeze-dried tomato paste or synthetic lycopene (Lycopene 10% WS, Roche). After 15days of dietary supplementation, the animals were killed and plasma and liver were collected. It showed that liver and plasma lycopene concentrations increased significantly as dietary lycopene level increased. In study 2, we focused on evaluating the immunomodulative effects of lycopene in mice. Six to seven weeks old Balb/c mice were fed ad libitum on chow diet and lycopene mixed with distilled water was orally administrated every other day for four weeks at two different concentrations(50 and 500mg/kg b.w.). After preparing the single cell suspension, the proliferation of splenocyte was determined by MTT assay. The plaque forming cell counting(PFC) was used to evaluate the humoral immune response to sheep red blood cells. After 48hrs of incubation with the mitogen(ConA or LPS)stimulation, the mouse splenocyte proliferation was increased at both concentrations than that of control group and the numbers of plaque forming cells(PFC) were also elevated. The result of this study may suggest that the dietary supplementation of lycopene may enhance the immune function by regulating the splenocytes proliferation and increasing the number of plaque forming cells(PFC) in mice.