

P36

## **Analysis of the fecal microflora and putrefactive metabolites of human subject administrating a probiotic, *Bacillus licheniformis***

Jin-Wook Kim, Hee-hyun Lee, Chun-Suk Nam,  
Kyoung-Dong Jun<sup>1</sup>, Bae-Jin Ha and Jae-Hwa Lee\*

Department of Bioscience and Biotechnology, Silla University,  
Gwaebop-dong, Busan 617-736, Korea

<sup>1</sup>Research and Development Center, Binex Co. Ltd., Busan, Korea

*Bacillus licheniformis* is one of the lactic ferments isolated from kochujang and soybean paste. It's useful material for improvement of fecal microflora. To investigate the effect of *Bacillus licheniformis* administration on fecal microflora and putrefactive metabolites in human. *Bacillus licheniformis* was administrated to twenty-three healthy subjects (15 men and 8 women, average age 25 years) three times a day for 2 weeks. Fecal samples were collected before (1st and 2nd weeks, control), during (3rd and 4th weeks), and 2weeks after the administration. The following microbial groups were evaluated in the feces : aerobic and anaerobic bacteria, *Bacillus licheniformis*, Yeast, *Staphylococcus*, *Pseudomonas*, Coliform, *Lactobacillus*, total lactic acid bacteria, *Salmonella*, *Bifidobacterium*, and *Clostridium perfringens*. Fecal concentrations of *Bacillus licheniformis* (3rd and 4th weeks), *Lactobacillus* (3rd week), total lactic acid bacteria (3rd week) were increased in all subjects, compared to the control, from the 3rd week after the administration of the probiotic. Total anaerobic bacteria (4th and 5th weeks), *Salmonella* (3rd and 4th weeks) was significant reduced from the 3rd week of administration. No significant changes in fecal concentration of total aerobic bacteria, *Staphylococcus*, *Pseudomonas*, coliform, *Bifidobacterium*, *Clostridium perfringens*, and yeast were observed. Six weeks after the administration, the concentration of all microorganisms returned to the basal level. Despite the absence of a statistical significance, the putrefactive metabolites (ammonia, indole, skatole, and p-cresol) tended to be lower during and after the test periods than the base line. These results show that this probiotic preparation is able to colonize the intestine, and suggest that it may be useful as a beneficial probiotic in humans.