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Organic Acid Differences in Korean Obesity Feces and Anti-Obesity Effect of Formic Acid

Myung-Ki Lee and Young Kyung Rhee

Traditional Food Research Center, Korea Food Research Institute 1201-62, Anyangpangyo-ro, Bundang-gu, Seongnam-si, Gyeonggi-do, 13539, Republic of Korea

It has been reported that obesity is caused by diet and that intestinal microflora appears differently. Unlike westerners who have a lot of meat consumption, Koreans eat more carbohydrates, less protein and lipid (the diet ratio was 60:15: 25), and also fewer obese people (compared 4.7% of Korean to 36% of USA, BMI over 30). The purpose of this study was to investigate the effects of dietary organic acids on obesity by analyzing organic acid metabolites in the feces of fifties aged of Korean men. In the analysis of fecal organic acids, formic acid was significantly lower in obese Koreans than in normal people, and there was no difference in propionic acid and butyric acid, which were known as anti - obesity organic acids. In animal experiments using high - fat mice diet, formic acid, propionic acid and butyric acid showed anti - obesity characteristics (on body weight, cholesterol and triglyceride content, etc.). In particular, in animal experiments, formic acid significantly decreased body weight, lipid cell size, and cholesterol and triglyceride content. Although there was no difference in Korean feces, propionic acid and butyric acid were estimated to have anti - obesity characteristics in high fat western diet because they showed anti - obesity effect in high fat mouse diet model. Therefore, it was estimated that the Korean diet induced more formic acid production, resulting in lower cholesterol and triglyceride content, suggesting that obesity is less common in Korean.

Biography:

Education

B.S. Sungkyunkwan University, Biology

M.S. Sungkyunkwan University, Dairy Science (Food Microbiology)

Ph.D. Sungkyunkwan University, Dairy Science (Food Microbiology)

Professional Experiences

1990 ~ 1992. Korea Nutrition Research Institute, Researcher

1992~ present. Korea Food Research Institute, Researcher

1998~1999. MacGill University, Visiting Scientist

Association Committee

The Korean Society for Microbiology and Biotechnology, member

The Korean Society of Food Science and Nutrition, member (2009, Board member)

Korea Kimchi Association, Board member.