Multifuctional Activities of Cultured extracts from Lactobacillus plantarum M1 as cosmeceutical ingredients.

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The effects of Lactic acid bacteria have been investigated on anti-tumor, cholesterol reduction in blood, promotion of immune and skin-beauty. We are focused on cosmeceutical activity of Lactic acid bacteria (LAB), M1, which is found in Korean traditional food, *Kimchi.* The LAB.M1 has been identified as *Lactobacillus plantarum* M1 and individually cultured with Soybean soup and Soybean-Curd whey, until the total acidity has been reached the highest. After then, cell-free extracts from M1 have been used for the following studies.

We assessed the effect of *Lactobacillus plantarum* M1 on the depigmentation of B16F10 melanoma cell. The melanin content of cells was decreased with 1-3% of cultured extracts. The tyrosinase activity was reduced by cell-free extracts of *Lactobacillus plantarum* M1. Anti-aging and anti-oxidative activity of M1 cultured extract was also studied in NIH-3T3 human fibroblast cells. It showed that induction of cell proliferation, collagen synthesis and free radical scavenging activity. Additional studies for anti-fungal and anti-acne activity were also detected on *Staphylococcus aureus* and *Propionibacterium acnes,* respectively.

These results suggest that cultured extract of *Lactobacillun plantarum* M1 would be used for cosmeceutical ingredients through multifunctional reaction on skin such as whitening, anti-wrinkle, anti-oxidation and anti-*acnes.*