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Inhibitory effects of *Lactobacillus paraplantarum* KNUC25 against
Streptococcus mutans and coliform bacteria

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Kimchi, a well-known Korean traditional health food, is fermented by various microorganisms including lactic acid bacteria (LAB). Diverse LAB were isolated from Kimchi and a number of antimicrobial compounds produced by LAB have been reported. One of those LAB, *Lactobacillus paraplantarum* KNUC25 showed the significant antibacterial activities against *Streptococcus mutans* KCTC3065 and the coliform bacteria by the spot-on-the-lawn test. *S. mutans* could cause dental caries and the coliform bacteria would occur during preservation of commercial Kimchi. The filtrated supernatant of KNUC25 (pH 5.0) showed the inhibitory effects against not only *S. mutans* but also coliform bacteria. The filtrated supernatant of KNUC25 adjusted to pH 7.0 also showed the antibacterial activities. The time-inhibitory curve of the filtrated supernatant of KNUC25 was investigated on *S. mutans* and coliform bacteria. The antibacterial activity of the supernatant would affect to the initial stage of those bacterial cell growth.

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Isolation Of Lactic Acid Bacteria From Pig Feces
That Lower Total Cholesterol Level

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High blood cholesterol is a risk factor for obesity, high blood pressure, arteriosclerosis, etc. Although there have been many efforts to lower and/or inhibit blood cholesterol by pharmacological therapies, the drugs could bear so many side effects such as dizziness, vomiting, etc. Instead, it was suggested to develop the functional beverage manufactured with lactic acid bacteria which have the higher capacity to lower the cholesterol in the serum. So, we have tried to isolate lactic acid bacteria, from pig feces, with higher ability to decrease total cholesterol. We have screened more than 1,500 colonies, and tested them for acid tolerance, bile acid tolerance and activity to degrade total cholesterol. Twelve strains were finally classified as better strains and named PCL-2 B2, PCL-4 C1, PCL-8 F2, PCL-9 G1, PCL-10 G2, PCL-12 H2, PCL-13 H3, PCL-14 H4, PCL-15 H5, PCL-26 K3, PCL-30 N1, PCL-33 O2, respectfully. PCL-33 O2 was remarkably superior in acid tolerance, even in pH 2 and PCL-30 N1 was also survived in pH 3. PCL-30 N1 showed higher capacity in bile acid tolerance. In terms of degradation of total cholesterol, PCL-30 N1, PCL-9 G1 were turned out to be superior. Overall, we identified PCL-30 N1 as a best candidate for starter for the functional yoghurt. We are still in the process of isolating more suitable strains and also applying the recombinant DNA technology. Our studies should contribute to the development of better starters and functional beverage to lower the blood cholesterol.