Antibacterial Production

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D, L-phenyl lactic acid produced by *Enterococcus faecalis* TH10 shows high antibacterial effect against various kinds of disease-causing bacteria.

Objective

Enterococcus faecalis TH10 isolated from "Tempeh" shows high antibacterial activity against various kinds of disease-causing germs. Therefore, we tried the identification and the refinement of the material which contributed to antibacterial activity.

Methods

Extract culture supernatant of *E.faecalis* TH10 with solvent and examined fraction indication of the antibacterial activity by HPLC equipped with reversed phase. We performed GC/MS chromatography measurement to identify an antibacterial agent.

Results

As the activity was observed in a fraction eluted by 80% methanol, we found high antibacterial activity for MRSA and the *Eschericha coli* O-157. Phenyllactic acid was identified as the major compound of *E. faecalis* TH10 and found the ratio of D-rotatory and L-rotatory phenyllactic acid provided from TH10 was 2:1. The lactic acid bacteria which produce D- and L-Phenyl lactic acid at the same time have not been found before so we found this is the original characteristic of *E. faecalis* TH10 and it suggested that *E. faecalis* TH10 contributed to high antibiotic action.

The antibacterial effect of TH10 lactic acid bacteria against pathogens

Strains \ phenyllactic acid[1]	50 mM		
Medium pH	6.8	6.0	5.5
Staphylococcus aureus (MRSA)	2.7[2]	3.7	4.2
Bacillus cereus	2.0	3.5	4.0
Escherichia coli O-157	3.0	3.0	3.5
Yersinia enterocolitica	4.0	4.3	5.1
Salmonella choleraesuis	2.0	2.5	3.7

1) Test composition ratio of D-rotatory and L-rotatory phenyllactic acid provided from TH10 is 2:1

2) Length from edge of paper-disc to inhibition area (mm)

"TH10" provides D,L- phenyllactic acid which has high antibacterial activity against various pathogens.