

***Glycine max* Merr enhances the viability and adhesion ability of *Lactobacillus buchneri* in gastrointestinal condition *in vitro*.**

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Probiotics are microorganisms that have beneficial effects on the health of the host. The health promoting effect by probiotics influences suppressing harmful bacteria, prevention of constipation, blood cholesterol reduction and regulation of blood pressure. Prebiotics are used to promote the growth or activity of microorganisms. Synbiotics, which are a mixture of probiotics and prebiotics, synergize in the intestines by complementing each other. Synbiotics not only improves the viability of the probiotics while passing through the gastrointestinal tract, maintain intestinal homeostasis, but also regulate balance of harmful and useful bacterial growth.

Glycine max Merr (GMM) has been widely used in Asian countries to treat cancer, obesity, oxidative stress and imbalanced immune diseases. In addition, it has been reported that dietary fiber-rich grains promote bowel movements and prevent constipation.

In this study, we investigated the viability of *Lactobacillus buchneri* (*L.buchneri*) strains, known as lactic acid bacteria under conditions of gastric fluid and intestinal fluid to determine the suitability of *L.buchneri* as probiotics. The adhesion ability of *L.buchneri* to caco-2 cells was also confirmed.

The present studies showed that GMM extract promoted the growth and activity of *L.buchneri* strains as prebiotics. Also, this results suggested that the mixture of *L.buchneri* and GMM extract can help maintain intestinal health and healthy body as synbiotics and health functional food material.

Key words: *Glycine max* Merr, *Lactobacillus buchneri*, viability, adhesion ability, synbiotics.

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