

Using Human-Digestive Simulator to Harbor Encapsulated *Lactobacillus casei* 01 along with Pasteurized-Purple-Rice Drinks for Examination of the Health-Promoting Effects

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Abstract : A human-digestive simulator consisted of four colon compartments, i.e., stomach, small intestine, proximal colon and distal colon used to harbor *L. casei* 01 plus either pasteurized ordinary-purple-rice drinks or germinated-purple-rice drinks. Accordingly, three treatment compositions had been set up and the effects of treatments on colon bacterial communities including their by-products were thoroughly examined. *L. casei* 01 plus purple-rice drinks gave rise to significantly high formation ($P \leq 0.05$) of short-chain-fatty acids (SCFA) of which highest acetic acid was found followed by propionic and butyric acids, while the germinated-rice drink showed the greatest impact. Moreover, the effect was more pronounced upon prolonged fermentation. In addition, the influence of treatments on colon microbes was also demonstrated. Accordingly, desirable bacteria including colon *Lactobacilli* and *Bifidobacteria* were significantly increased ($P \leq 0.05$) in both colons in comparison with the control and the effect was more prominent after adding purple-rice drink. On the other hand, undesirable *Clostridia* and coliforms were apparently diminished by the influence of treatment conditions, in which both compartments exhibited similar results.

Keywords : human-digestive simulator, *Lactobacillus casei* 01, Pasteurized-purple-rice drinks

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