Supplementary Materials

1. Gelatinization properties analysis method

Uncooked samples were weighted and mixed with distilled water, then were transformed into the sample cylinder. After rapid agitation, the viscosity of the mix-ture was detected by a rapid viscosity analyzer (Perten RVA-TecMaster, Sweden). Test procedure was as follows: the starting temperature was 50℃ and the temperature was kept for 1 min. The temperature was raised to 95℃ at a speed of 12℃/min and main-tained for 2.5 min. The temperature was cooled to 50℃ at a speed of 12℃/min and maintained for 1 min. The speed of the stirrer was 160 r/min during the test.

2. Starch gelatinization parameters of rice, BER and FBER.

Table S1. Starch gelatinization parameters of rice, BER and FBER.

Sample type	Peak viscosity (cP)	Retention viscosity (cP)	Disintegration value (cP)	Final viscosity (cP)	Retrogradation value (cP)
Rice	2822.50±17.51^{a}	1916.50±16.23^{a}	936.00±4.667^{a}	2434.00±22.56^{a}	521.00±6.11^{b}
BER	1414.00±12.88^{b}	1058.00±11.33^{b}	352.50±1.66^{b}	2545.00±22.38^{a}	1436.00±7.88^{a}
FBER	501.50±6.35^{c}	356.00±1.15^{c}	144.00±1.51^{c}	622.00±7.43^{b}	285.00±4.51^{c}

Data were expressed as means ± standard deviations (n=3). Different letters mean significant differences exist between groups (P<0.05). BER: barley extruded rice; FBER: fermented barley extruded rice.

3. Isolation method of Lactiplantibacillus plantarum dy-1

Natural fermented cabbage was cut into pieces and washed by sterilized saline. The saline was diluted using sterile glass test tube. 0.1 mL of diluent was spread on DeMan, Rogosa and Sharpe plate and grown anaerobically at 37°C for 24 hours. Typical colonies were picked and then isolated using streak plate techniques. The obtained single colony was considered as single strain and was preserved at -80℃ using 30% glycerol. 16S rDNA of the strain was amplified and sequenced for species identification.

4. Microbial abundance between samples at genus level

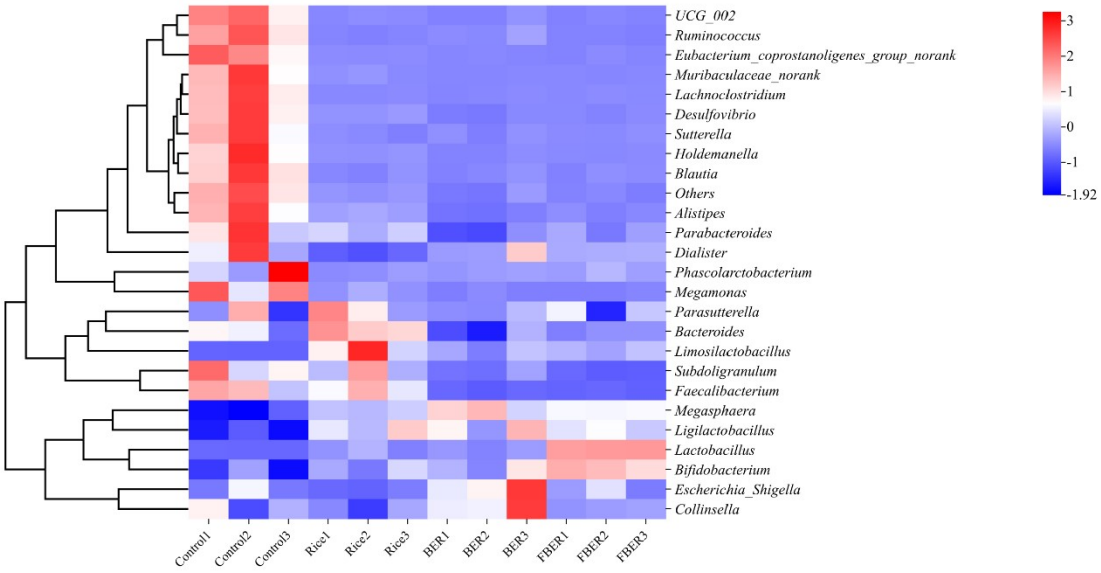

Figure S1. Microbial abundance between samples at genus level. BER: barley extruded rice; FBER: fermented barley extruded rice.