

Table S1. Components of selective media

Microbiota	Culture medium (g/L)
<i>Faecal coliform</i>	Tryptone 20.0, lactose 10.0, bovine bile salt 5.0, NaCl 5.0, neutral red 0.075, agar 20.0
<i>Lactobacillus</i>	Tryptone 10.0, beef powder 10.0, yeast powder 5.0, glucose 20.0, Tween-80 1.0, K2HPO4 2.0, sodium acetate 5.0, trisodium citrate 2.0, magnesium sulfate 0.1, manganese sulfate 0.05, L-cysteine 0.5, agar 20.0
<i>Bacteroid</i>	Tryptone 20.0, yeast powder 5.0, soluble starch 0.5, xylan 5, NaCl 5.0, K2HPO4 0.05, KH2PO4 0.05, L-cysteine hydrochloride 1.0, heme chloride 0.01, vitamin K1 0.002, kanamycin 0.1, vancomycin 0.0075, bromocresol violet 0.012, agar 20.0
<i>Bifidobacterium</i>	Tryptone 15.0, dextrose 20.0, yeast powder 2.0, soluble starch 0.5, NaCl 5.0, liver extract 5.0, Tween-80 1.0, mupirocin 0.05, agar 20.0, tryptone 5.0, casein peptone 16.0, bovine brain extract 4.0, bovine heart extract 4.0
Total anaerobic bacteria	Glucose 2.0, NaCl 5.0, Na2HPO4 2.5, agar 13.5
Fecal	Starch 6.0, arabinogalactan 1.0, pectin 2.0, xylan 1.0, glucose 0.4, yeast powder 3.0, L-cysteine 0.5, mucin 2.0, KCl 1.0, NaCl 4.5, K2HPO4 0.5, KH2PO4 0.5, CaCl2-6H2O 0.15, MgSO4-7H2O 0.01, FeSO4-7H2O 0.005, heme chloride 0.025, Tween-80 1.0, bile salts 0.4, vitamin mixture 0.01, Menaquinone 1.0, D-biotin 2.0, pantothenic acid 10.0, nicotinamide 5.0, p-aminobenzoic acid 5.0
<i>Akkermansia muciniphila</i>	Tryptone 5.0, casein peptone 16.0, bovine brain extract 4.0, bovine heart extract 4.0 Glucose 2.0, NaCl 5.0, Na2HPO4 2.5, mucin 2.0

Note: The above medium was supplemented with low-gluten rice (LGR), common rice (CR), and rice starch (RS) all at 2 g/L.

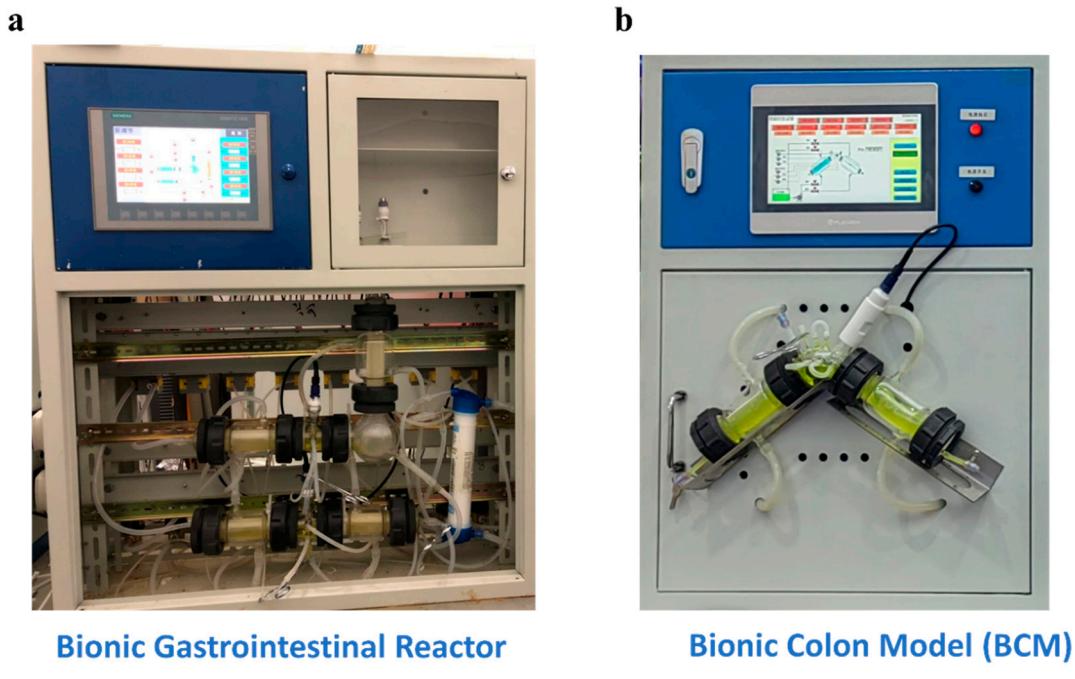


Figure S1. Dynamic simulation equipment. **(a)** bionic gastrointestinal reactor (BGR); **(b)** bionic colon model (BCM).