

Supplementary Materials and Methods

LGG adhesion assay

Mucin (partially purified porcine gastric mucin type III, Sigma-Aldrich) at 1 mg/ml in 10 mM HEPES/Hanks buffer was immobilized on 24 well polystyrene plate for 1 hour at room temperature and subsequently incubated overnight at 4°C. Then wells were washed twice with 10 mM HEPES/Hanks buffer. LGG was cultured with YAMC-CM or RPMI medium for 24 hours, washed with PBS, and suspended in PBS at 10^8 CFU/ml. LGG (3×10^7 CFU/well) was added to mucin-coated wells and incubated at 37 °C for 1 hour. Wells were thoroughly washed twice with PBS to remove unbound bacteria. 0.5% (v/v) Triton X-100 solution in PBS was added to the well and incubated at room temperature for 2 hours under gentle agitation to dislocate the bound bacteria. The number of LGG was examined by measurement of OD600 using a spectrophotometer. The percentage of adhesion was calculated as: $(\text{adhere LGG} / \text{total loading LGG}) \times 100$.