

Table S1 Primers used for qPCR

Gene	Forward	Reverse
ZO-1	5'-CTTCTCTTGCTGGCCCTAAAC-3'	5'-TGGCTTCACTTGAGGTTTCTG-3'
ZO-2	5'-AACGGATGCTGGAAGTTAAT-3'	5'-TCTGCTTGCTGTCTCTCAACA-3'
Occludin	5'-CACACTTGCTTGGGACAGAG-3'	5'-TAGCCATAGCCTCCATAGCC-3'
Claudin1	5'-GATGTGGATGGCTGTCATTG-3'	5'-CCTGGCCAAATTCATACCTG-3'
β -actin	5'-GGCTGTATTCCCCTCCATCG-3'	5'-CCAGTTGGTAACAATGCCATGT-3'

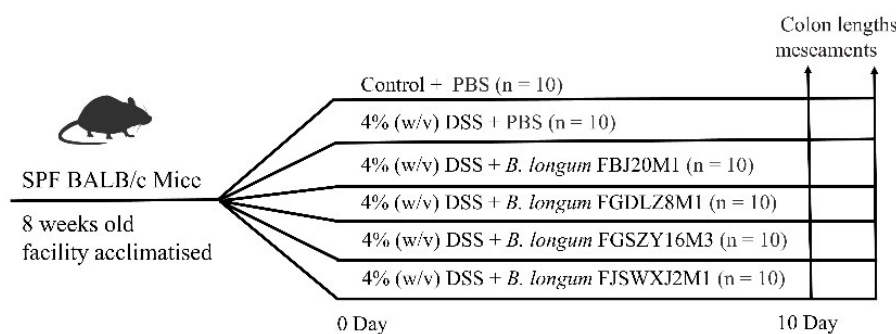


Fig. S1 Animal experiment scheme of the study. Six groups (Control, DSS, *B. longum* FBJ20M1, *B. longum* FGDZ8M1, *B. longum* FGSZY16M3 and *B. longum* FJSWXJ2M1) were included in this study.

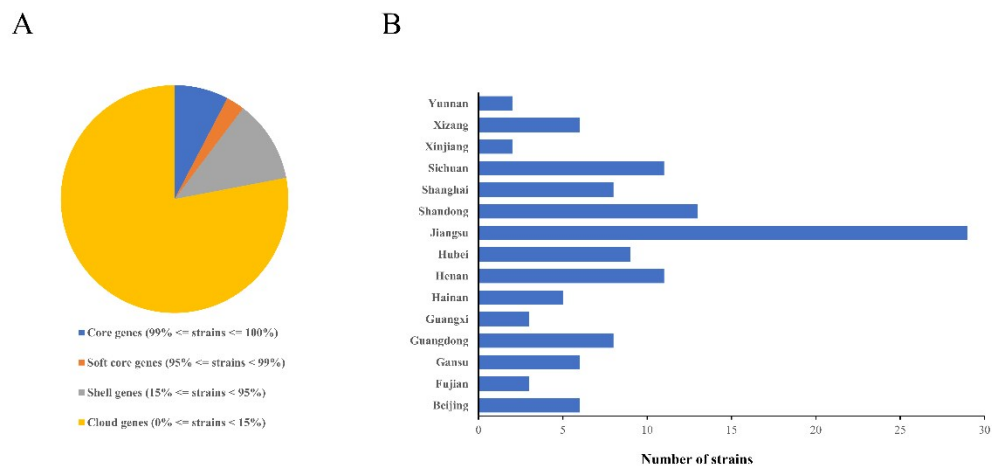


Fig. S2 The genomic and genetic characteristics of *B. longum* strains in fecal samples from a Chinese population. (A) Statistical numbers of *B. longum* core- and pan-genes. (B) Number of *B. longum* strains from different provinces or municipalities.

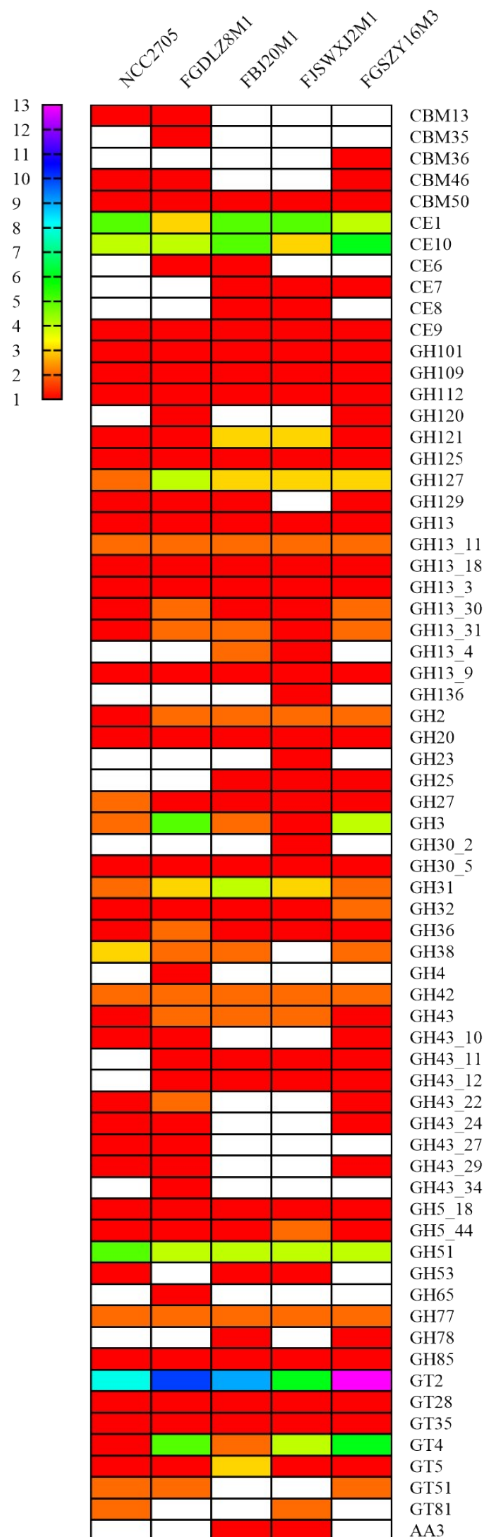


Fig. S3 Distribution of CAZY families with copy number disparities