

Supplementary material

Table S1 Disease activity index (DAI) score standard.

Score	Wight loss	Stool consistency	Blood stool
0	None	Normal	None
1	1%~5%	Soft stool	Slight occult blood
2	5%~10%	Paste stool	Occult blood
3	10%~15%	Loose stool	Bleeding
4	>15%	Diarrhea	Gross bleeding

Table S2 The standard for evaluation of histological assessment index (HA score).

Score	Inflammation	Extent of injury	Crypt damage	Percentage of tissue involved
0	None	None	None	
1	Slight	Mucosal	Basal 1/3 damaged (the number of goblet cell decrease)	1%-25%
2	Severe	Mucosal and submucosal	Basal 2/3 damaged (A large number of goblet cells disappeared)	26%-50%
3	Severe	Transmural	Only the surficial epithelium is intact	51%-75%
4	Severe	Chorion layer	The entire crypt and epithelium lost	76%-100%

Table S3: List of antibodies

Name of Antibody	Catalog number	Concentration	Company
occludin	GB111401	IF: 1:500	Servicebio
Muc2	GB111344	IF: 1:500	Servicebio
ZO-1	GB111402	IF: 1:500	Servicebio

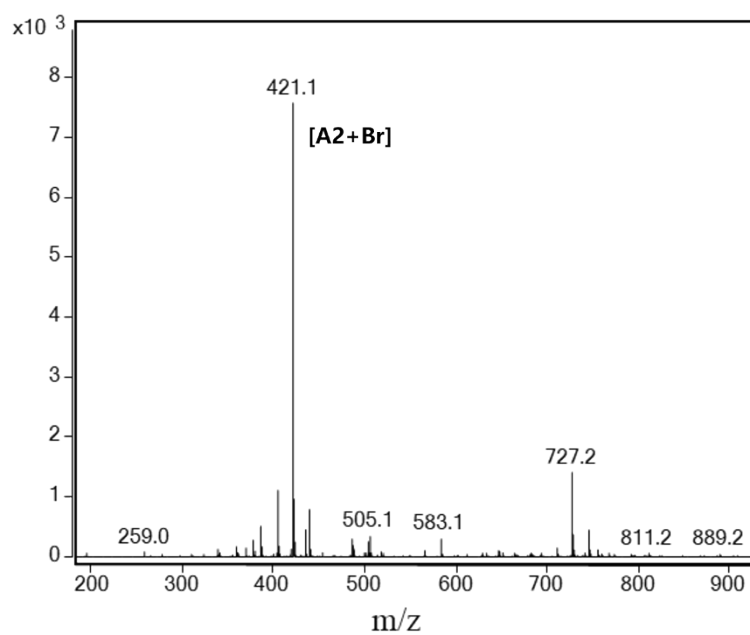
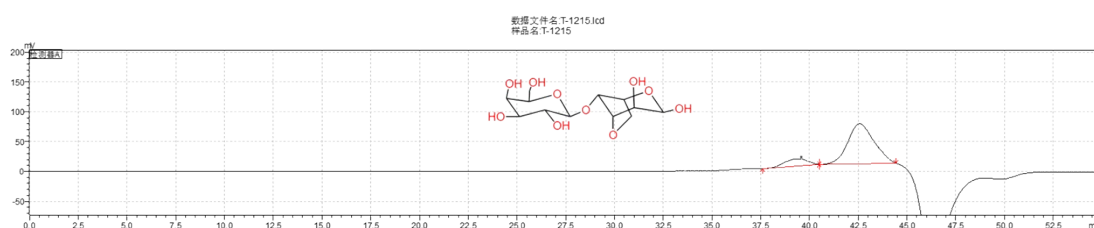


Fig. S1 A2 purity detected by HPLC-RID and mass spectrometry. The retention time of A2 was 42.574 min, detected by Superdex™ 30 increase. After comparing with the standard product, the purity of the A2 was > 85%.

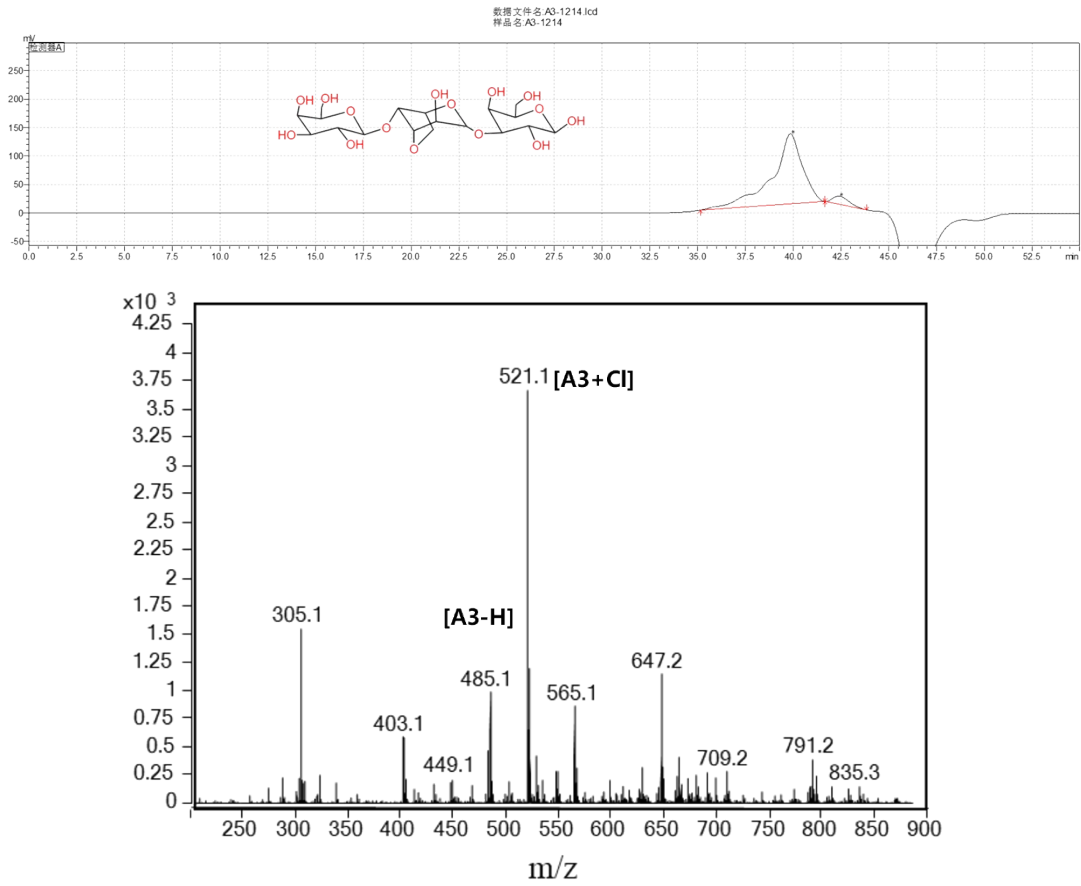


Fig. S2 A3 purity detected by HPLC-RID and mass spectrometry. The retention time of A3 was 39.854 min, detected by Superdex™ 30 increase. After comparing with the standard product, the purity of the A3 was > 85%.

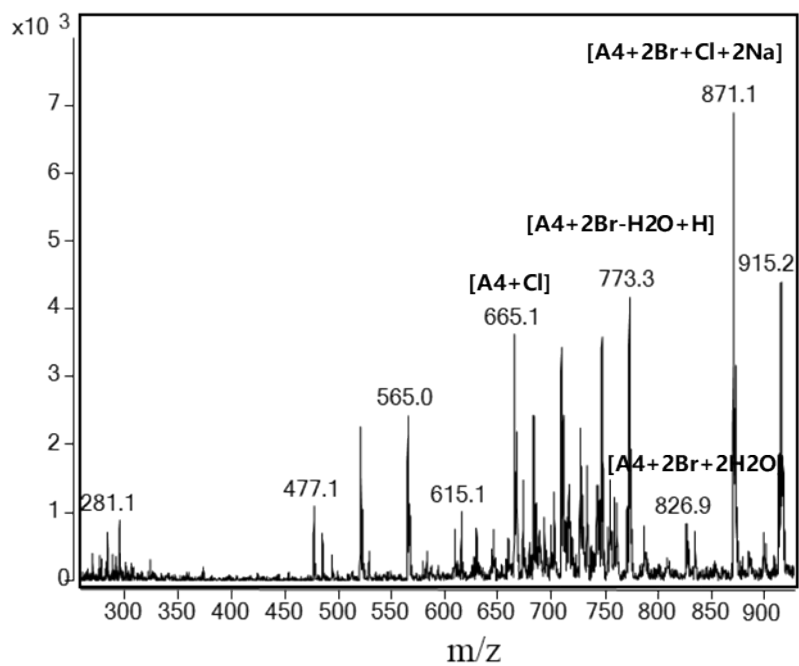
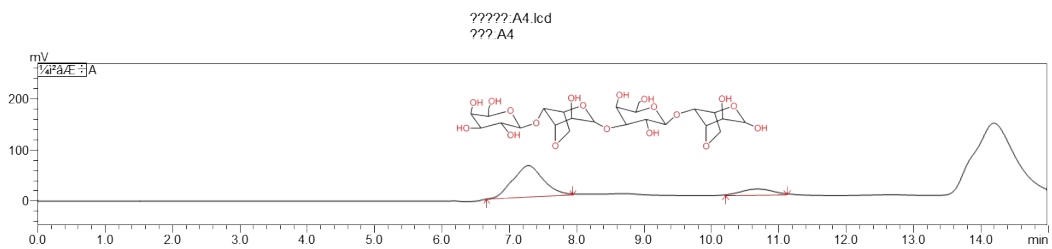


Fig. S3 A4 purity detected by HPLC-RID and mass spectrometry. the retention time of A4 was 7.311 min, detected by Sugar pak I. After comparing with the standard product, the purity of the A4 was $> 85\%$.

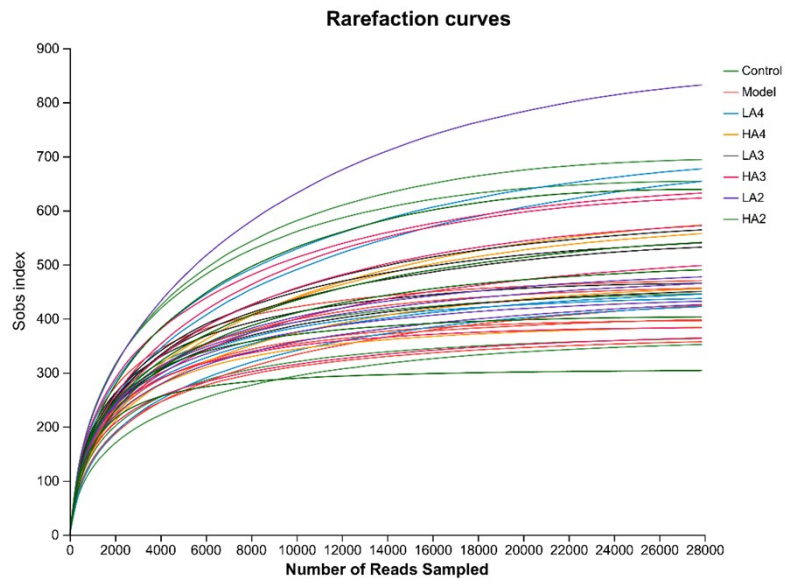


Fig. S4 Dilution curve of the sample's intestinal flora. When the end tends to be flat, it means that the sample size of the measurement is adequate.

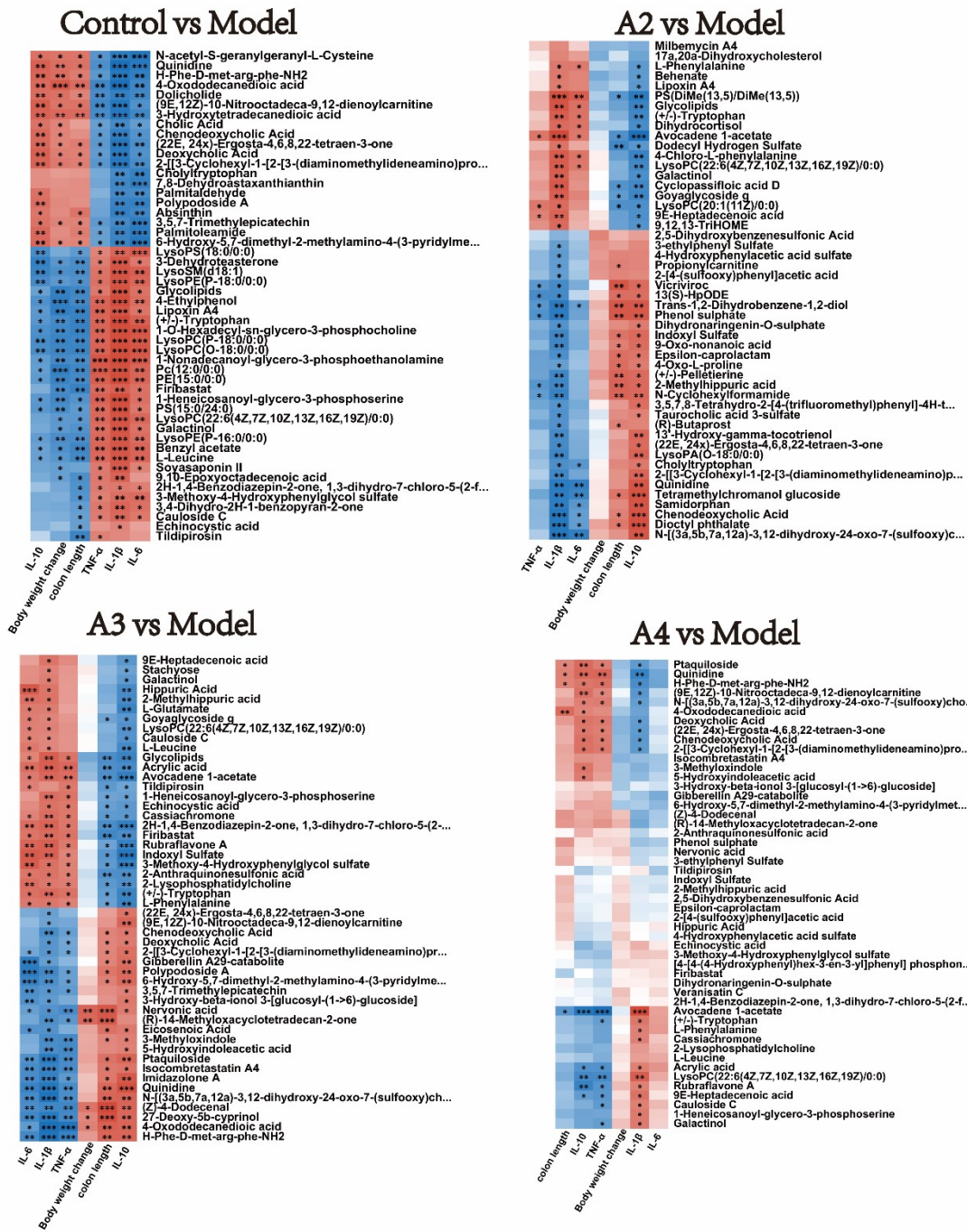


Fig. S5 heatmap of the Spearman correlation coefficients between the top 50 distinct metabolites and colitis-related parameters.