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Supporting Information

2 **Dietary *Lactobacillus johnsonii*-derived extracellular vesicles ameliorate**
3 **acute colitis by regulating gut microbiota and maintaining intestinal**
4 **barrier homeostasis**

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- 13 **Table S1.** Primer sequences used in the real-time PCR.
- 14 **Table S2.** The relative abundance of differentially expressed metabolites.
- 15 **Table S3.** The complete results of differential metabolite KEGG functional annotation.
- 16 **Fig. S1.** Daily changes in diarrhea (A) and hematochezia (B) in mice during the experiment.
- 17 **Fig. S2.** Daily changes in diarrhea (A) and hematochezia (B) in mice after LJ-EVs
18 intervention.
- 19 **Fig. S3.** (A) Effect of LJ-EVs administration on the gut microbiome composition in DSS-
20 induced colitis mice at the species level. (B) The specific gravity and relationship of different
21 species in the sample are displayed through a ternary phase diagram.
- 22 **Fig. S4.** (A) Principal component analysis (PCA) of metabolites between groups. (B) Cluster
23 heatmap of differentially expressed metabolites. (C) The top 10 metabolites with differences
24 between groups.
- 25 **Fig. S5.** Western blot raw images.

26 **Table S1.** Primer sequences used in the real-time PCR.

Gene	Accession number	Primer sequence (5'–3')
ZO-1	XM_036152893.1	F: ACCTCTGCAGCAATAAAGCAG R: GAAATCGTGCTGATGTGCCA
Occludin	NM_001360536.1	F: TTCAGGTGAATGGGTCACCG R: AGATAAGCGAACCTGCCGAG

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28 **Table S2.** The relative abundance of differentially expressed metabolites.



Table S2.xlsx

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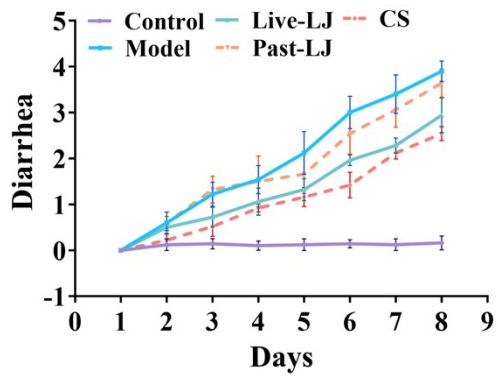
30 **Table S3.** The complete results of differential metabolite KEGG functional annotation.



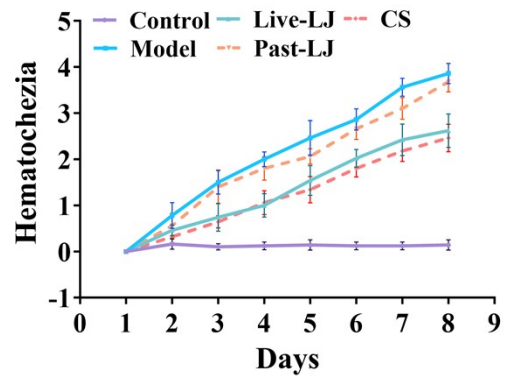
Table S3.xlsx

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A

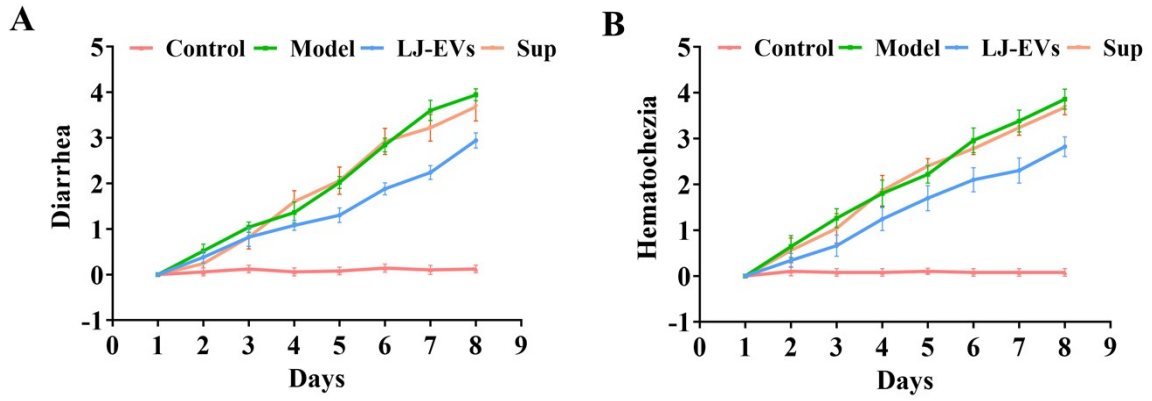


B



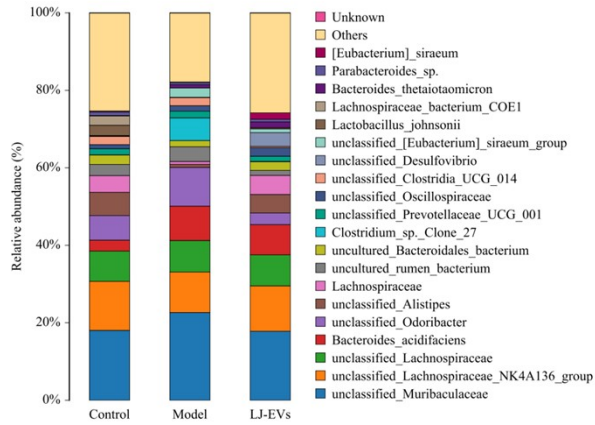
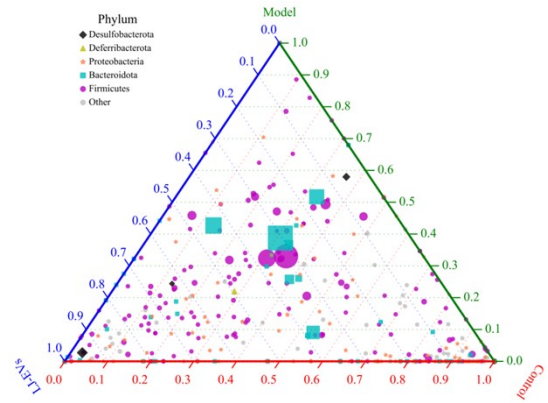
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33 **Fig. S1.** Daily changes in diarrhea (A) and hematochezia (B) in mice during the experiment.



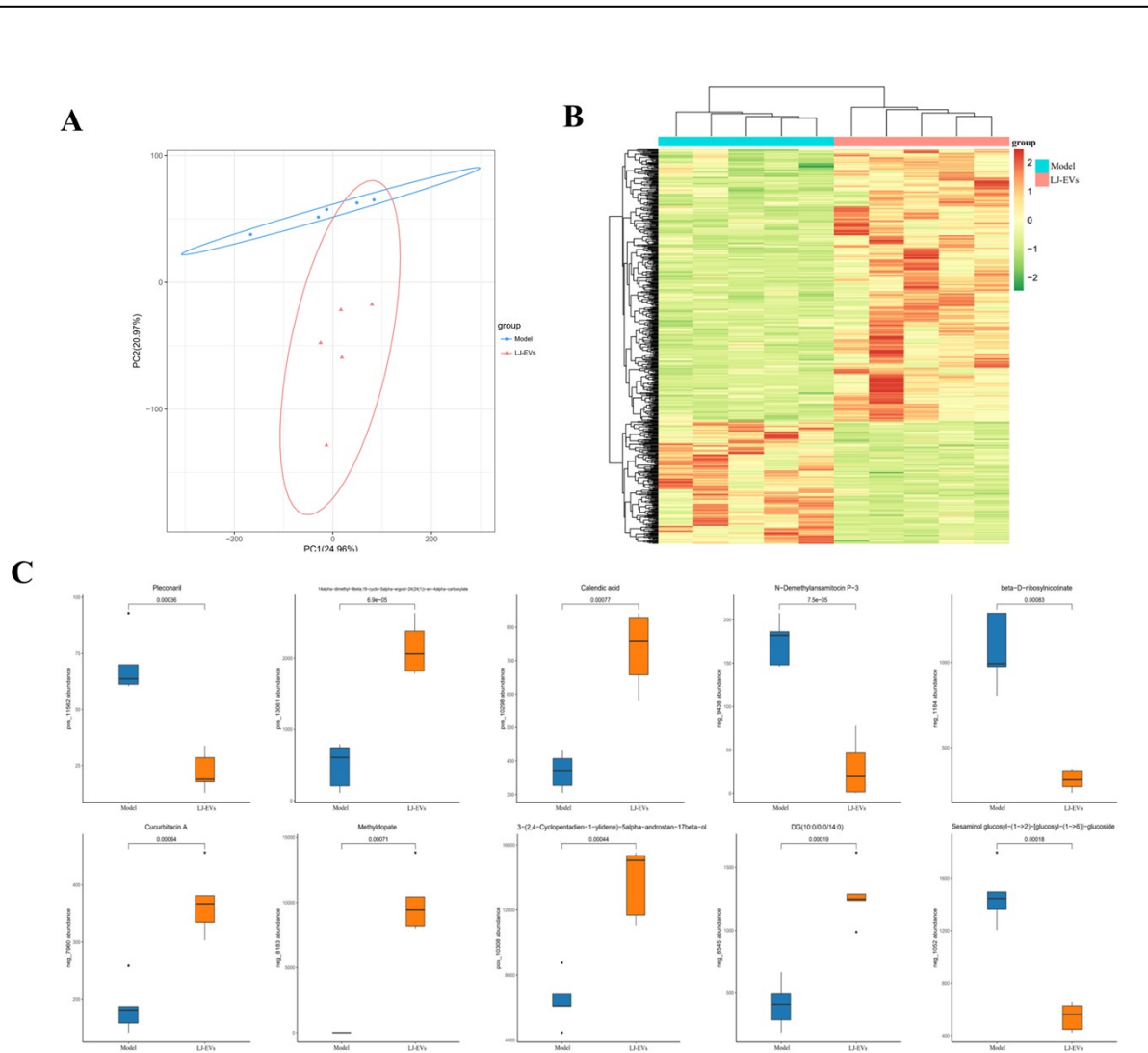
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35 **Fig. S2.** Daily changes in diarrhea (A) and hematochezia (B) in mice after LJ-EVs and
36 supernatant of *L. johnsonii* culture with EVs removed intervention.

A**B**

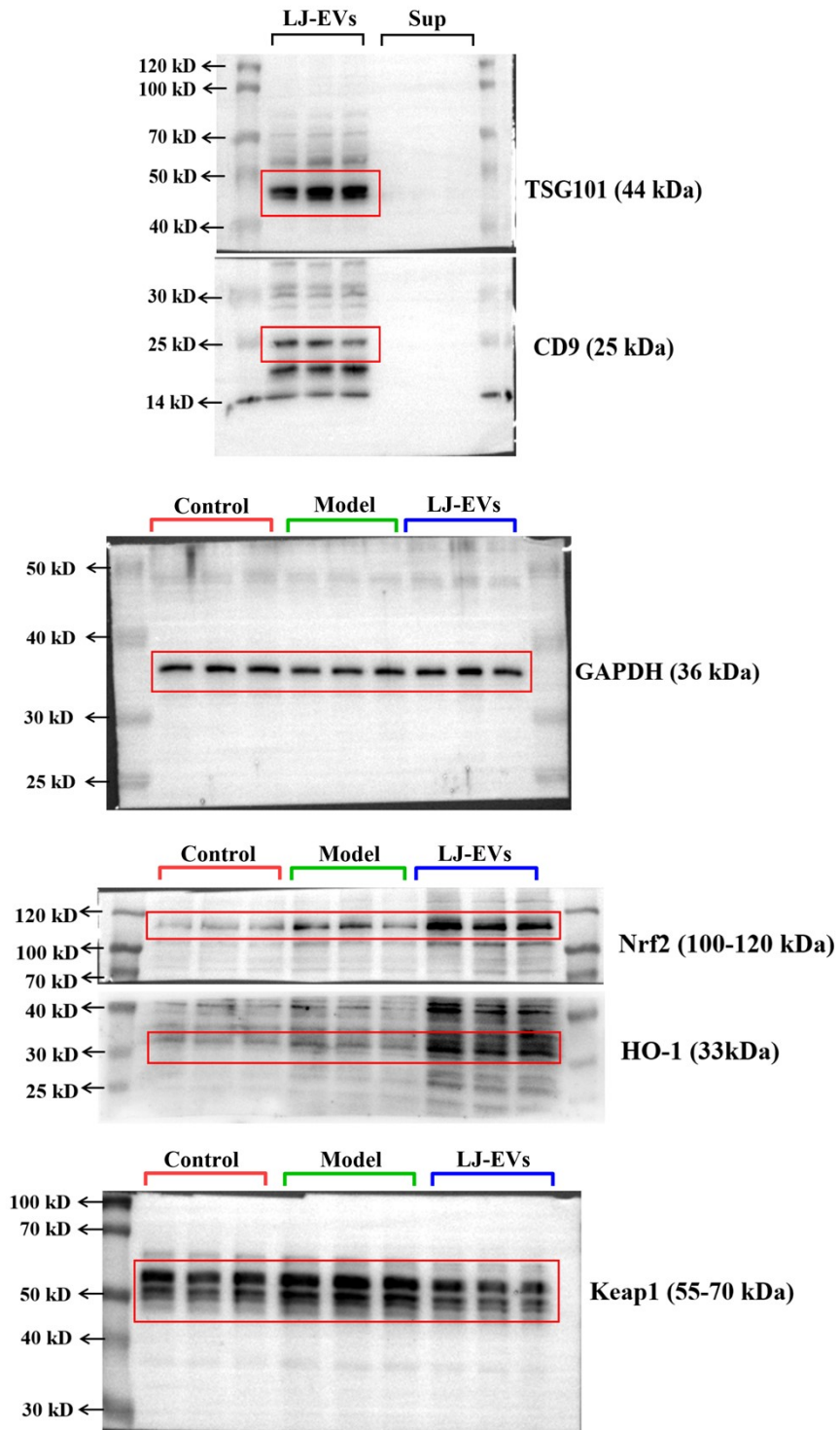
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38 **Fig. S3.** (A) Effect of LJ-EVs administration on the gut microbiome composition in DSS-
 39 induced colitis mice at the species level. (B) The specific gravity and relationship of different
 40 species in the sample are displayed through a ternary phase diagram.



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42 **Fig. S4.** (A) Principal component analysis (PCA) of metabolites between groups. (B) Cluster
 43 heatmap of differentially expressed metabolites. (C) The top 10 metabolites with differences
 44 between groups.



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 46 **Fig. S5.** Western blot raw images.