# Supplementary information

# *Ascophyllum nodosum* polysaccharide regulates gut microbiota metabolites to protect against colonic inflammation in mice

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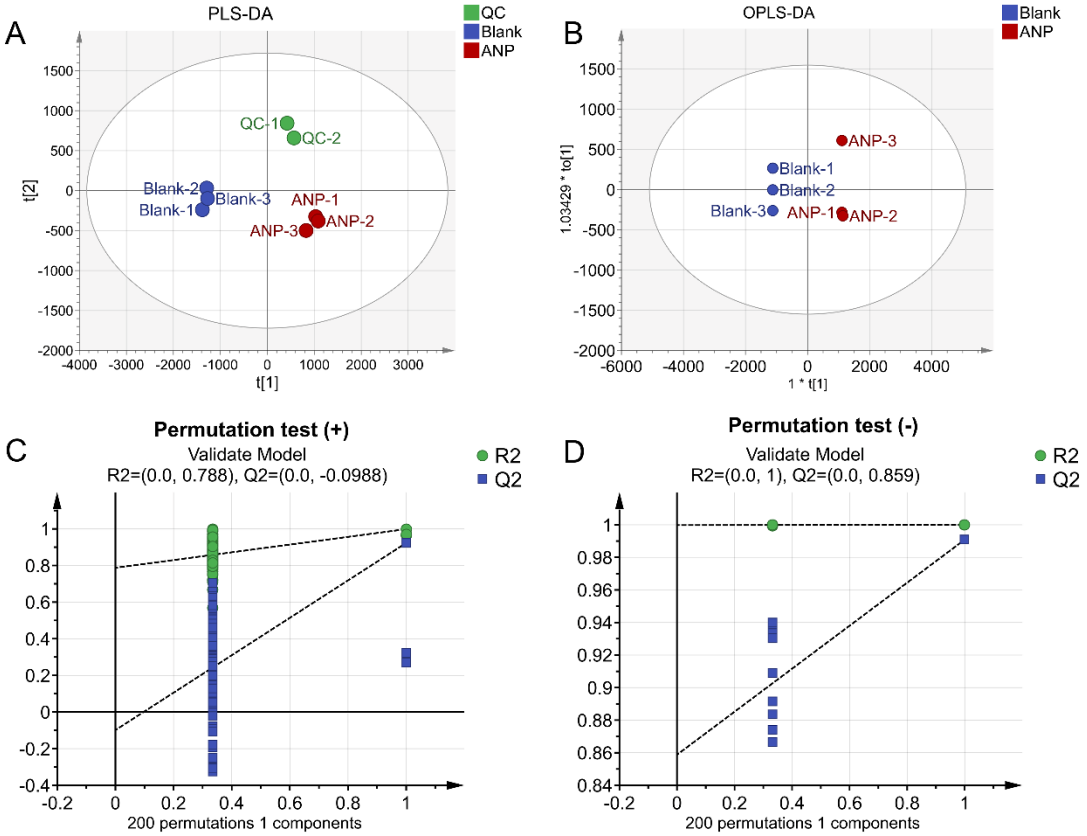
**Table S1.** Identification results of differential metabolites between the Blank and ANP groups.

**Fig. S1.** PLS-DA (A), OPLS-DA (B), and permutation test analysis of ANP and Blank groups in positive model (C) and negative model (D).

**Table S1.** Identification results of differential metabolites between the Blank and ANP groups.

| No. | Metabolite | Formula | VIP | Mode |
|---|---|---|---|---|
| 1 | Cholic acid | C24H40O5 | 2.97 | - |
| 2 | Deoxycholic acid | C24H40O4 | 2.23 | - |
| 3 | Vaccenic acid | C18H34O2 | 2.06 | - |
| 4 | L-Leucine | C6H13NO2 | 1.65 | - |
| 5 | Undecanoic acid | C11H22O2 | 1.44 | - |
| 6 | Linoleic acid | C18H32O2 | 1.06 | - |
| 7 | Chenodeoxycholic acid | C24H40O4 | 5.23 | + |
| 8 | Cholic acid | C24H40O5 | 2.56 | + |
| 9 | Deoxycholic acid | C24H40O4 | 2.23 | + |
| 10 | Brassinolide | C28H48O6 | 2.22 | + |
| 11 | D-Alloisoleucine | C6H13NO2 | 1.70 | + |
| 12 | Glabrol | C25H28O4 | 1.69 | + |
| 13 | Lithocholic acid | C24H40O3 | 1.64 | + |
| 14 | Hernandezine | C39H44N2O7 | 1.54 | + |
| 15 | Platyphylline | C18H27NO5 | 1.50 | + |
| 16 | Saikosaponin E | C42H68O12 | 1.39 | + |
| 17 | 2-Acetoxy-4-pentadecylbenzoic acid | C24H38O4 | 1.36 | + |
| 18 | Erucamide | C22H43NO | 1.35 | + |
| 19 | Miltirone | C19H22O2 | 1.23 | + |
| 20 | Pyrrolidine | C4H9N | 1.10 | + |
| 21 | 2-Piperidone | C5H9NO | 1.07 | + |
| 22 | Picfeltarraenin IA | C41H62O13 | 1.06 | + |

**Fig. S1**


A
PLS-DA
QC
Blank
ANP
QC-1
QC-2
Blank-2
Blank-3
Blank-1
ANP-1
ANP-2
ANP-3
t[2]
t[1]
B
OPLS-DA
Blank
ANP
ANP-3
Blank-1
Blank-2
Blank-3
ANP-1
ANP-2
1.03429 * to[1]
1 * t[1]
C
Permutation test (+)
Validate Model
R2=(0.0, 0.788), Q2=(0.0, -0.0988)
R2
Q2
200 permutations 1 components
D
Permutation test (-)
Validate Model
R2=(0.0, 1), Q2=(0.0, 0.859)
R2
Q2
200 permutations 1 components