

Supporting information

for

The effects of Paroxetine on benthic microbial food web and nitrogen transformation in river sediments

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Figure S2. Heat map of relative abundance of eukaryotes in different levels of treatment groups on the 6th, 12th and 18th days. (a) is at class level and (b) is at order level; C: sediment without paroxetine addition; L: 10 µg/L paroxetine; M: 100 µg/L paroxetine; H: 1000 µg/L paroxetine.

Table S1. Results of ANOVA for metabolism pathways in paroxetine treatment group.

Table S2. Results of ANOVA for eukaryotic α -diversity at different concentrations and at different times.

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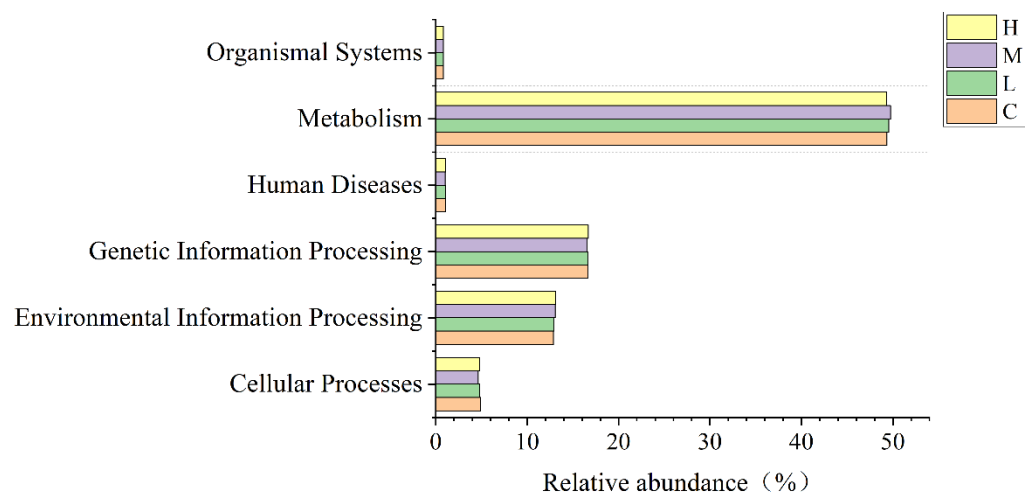


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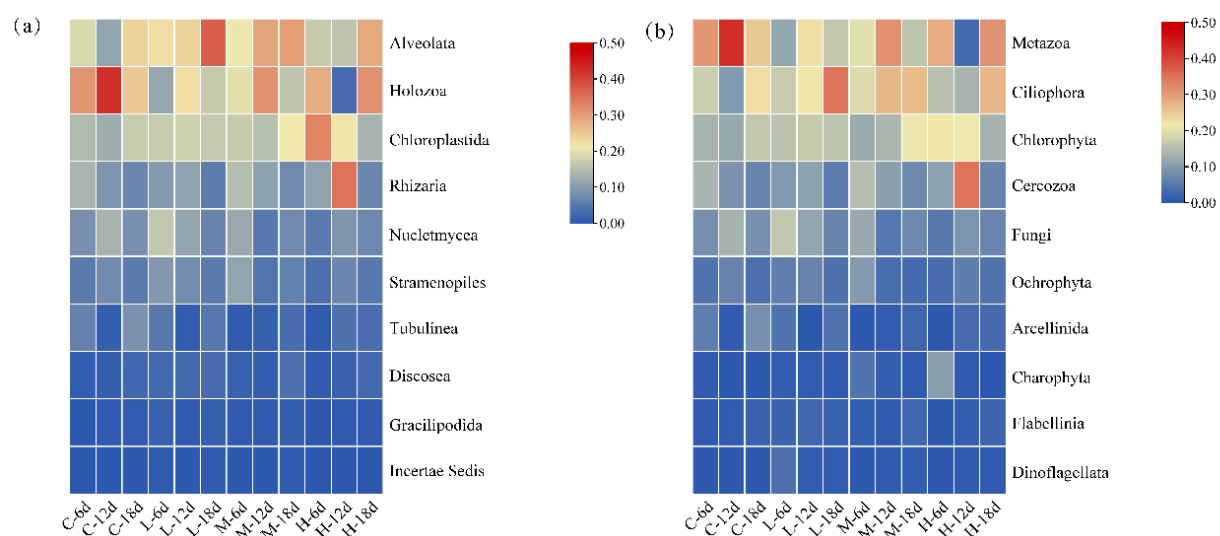


Figure S2. Heat map of relative abundance of eukaryotes in different levels of treatment groups on the 6th, 12th and 18th days. (a) is at class level and (b) is at order level; C: sediment without paroxetine addition; L: 10 $\mu\text{g/L}$ paroxetine; M: 100 $\mu\text{g/L}$ paroxetine; H: 1000 $\mu\text{g/L}$ paroxetine.

Table S1. Results of ANOVA for metabolism pathways in paroxetine treatment group.

| Metabolisms | P | F |
|---|-------|--------|
| Xenobiotics Biodegradation and Metabolism | 0.151 | 5.165 |
| Nucleotide Metabolism | 0.068 | 13.241 |
| Metabolism of Terpenoids and Polyketides | 0.054 | 17.111 |
| Metabolism of Other Amino Acids | 0.141 | 5.610 |
| Metabolism of Cofactors and Vitamins | 0.058 | 15.670 |
| Lipid Metabolism | 0.048 | 19.317 |
| Glycan Biosynthesis and Metabolism | 0.062 | 14.627 |
| Energy Metabolism | 0.033 | 28.937 |
| Carbohydrate Metabolism | 0.019 | 51.529 |
| Biosynthesis of Other Secondary Metabolites | 0.010 | 97.722 |
| Amino Acid Metabolism | 0.057 | 16.203 |

Table S2. Results of ANOVA for eukaryotic α -diversity at different concentrations and at different times.

| Factors | Chao 1 index | | ACE index | | Simpson index | | Shannon index | |
|---------------|--------------|-------|-----------|-------|---------------|-------|---------------|-------|
| | F | P | F | P | F | P | F | P |
| Time | 0.720 | 0.513 | 0.929 | 0.430 | 0.386 | 0.690 | 0.051 | 0.950 |
| Concentration | 2.238 | 0.161 | 2.337 | 0.150 | 0.823 | 0.517 | 0.751 | 0.552 |

Table S3. Standardized total, direct and indirect effects of all the independent variables on dependent variables.

| | | Meiofauna:Pr otozoa | Meiofauna:B acteria | Ciliates :HF | Ciliates:Ba acteria | HF:Bac teria | Amoeba:Ba acteria |
|---|------------------------------|------------------------|------------------------|-----------------|------------------------|-----------------|----------------------|
| Standard ized Total Effects | Meiofauna:B acteria | 0.896 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | Ciliates:HF | -0.042 | -1.248 | 0.000 | 0.000 | 0.000 | 0.000 |
| | Ciliates: Bacteria | -0.53 | 1.181 | -0.04 | 0.000 | 0.000 | 0.000 |
| | HF: Bacteria | -0.046 | 0.655 | -0.628 | -0.297 | 0.000 | 0.000 |
| | Amoeba: Bacteria | -0.578 | 0.365 | 0.136 | 0.449 | -0.240 | 0.000 |
| | NO ²⁻ | 0.446 | 0.153 | -0.242 | -0.144 | -0.135 | 0.562 |
| | NO ³⁻ | 0.099 | -0.108 | 0.087 | 0 | 0 | 0.000 |
| | NH ₄ ⁺ | -0.115 | -1.634 | -0.399 | 0.096 | 0.314 | -0.174 |
| Standard ized Direct Effects | Meiofauna:B acteria | 0.896 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | Ciliates:HF | 1.076 | -1.248 | 0.000 | 0.000 | 0.000 | 0.000 |
| | Ciliates: Bacteria | -1.545 | 1.131 | -0.04 | 0.000 | 0.000 | 0.000 |
| | HF: Bacteria | -0.418 | 0.209 | -0.639 | -0.297 | 0.000 | 0.000 |
| | Amoeba: Bacteria | -0.456 | 0.075 | 0.000 | 0.378 | -0.240 | 0.000 |
| | NO ²⁻ | 0.546 | 0.000 | -0.334 | -0.397 | 0.000 | 0.562 |
| | NO ³⁻ | 0.102 | 0.000 | 0.087 | 0.000 | 0.000 | 0.000 |
| | NH ₄ ⁺ | 1.979 | -2.293 | -0.194 | 0.256 | 0.272 | -0.174 |
| Standard ized Indirect Effects | Meiofauna:B acteria | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | Ciliates:HF | -1.118 | 0 | 0.000 | 0.000 | 0.000 | 0.000 |
| | Ciliates: Bacteria | 1.015 | 0.049 | 0.000 | 0.000 | 0.000 | 0.000 |
| | HF: Bacteria | 0.371 | 0.447 | 0.012 | 0.000 | 0.000 | 0.000 |
| | Amoeba: Bacteria | -0.122 | 0.289 | 0.136 | 0.071 | 0.000 | 0.000 |
| | NO ²⁻ | -0.1 | 0.153 | 0.092 | 0.253 | -0.135 | 0.000 |
| | NO ³⁻ | -0.004 | -0.108 | 0 | 0 | 0 | 0.000 |
| | NH ₄ ⁺ | -2.094 | 0.659 | -0.205 | -0.159 | 0.042 | 0.000 |