附表1 腾冲热泉样品的主量元素测试结果（单位：mg/L）

Table S1 Concentrations (in mg/L) of major elements in the hot spring samples collected from Tengchong

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 编号 | HCO3- | CO32- | F- | Cl- | Br- | NO2- | NO3- | SO42- | Na | Mg | K | Ca | Si |
| HMZ | 244.06  | 42.83  | 8.32  | 335.45  | 0.67  | 2.95  | 1.29  | 33.13  | 381.30  | 0.08  | 55.84  | 2.01  | 107.25  |
| HMZ-D1 | 455.79  | 34.51  | 7.57  | 341.94  | 0.00  | 2.88  | 1.28  | 30.46  | 350.76  | 0.03  | 52.29  | 1.31  | 100.88  |
| HMZ-D2 | 509.90  | 42.03  | 7.90  | 351.19  | 0.00  | 2.96  | 1.29  | 33.26  | 357.88  | 0.03  | 52.82  | 1.26  | 99.54  |
| HMZ-D3 | 531.98  | 41.98  | 8.12  | 357.42  | 0.00  | 2.92  | 1.28  | 32.82  | 362.95  | 0.06  | 54.36  | 2.00  | 99.29  |
| LP01 | 1190.72  | 30.04  | 8.76  | 315.69  | 0.00  | 2.70  | 4.91  | 20.25  | 569.15  | 2.66  | 43.59  | 12.46  | 83.53  |
| LP01-D1 | 1080.31  | 55.55  | 8.79  | 315.16  | 0.00  | 2.70  | 4.90  | 21.62  | 548.01  | 3.89  | 43.19  | 13.83  | 82.97  |
| LP01-D2 | 1249.28  | 35.09  | 8.55  | 313.99  | 0.00  | 2.72  | 4.93  | 22.56  | 548.89  | 4.09  | 42.67  | 17.65  | 81.44  |
| LP01-D3 | 1405.44  | 31.03  | 8.98  | 327.47  | 0.00  | 2.73  | 5.16  | 22.81  | 585.62  | 3.31  | 44.48  | 17.18  | 83.49  |
| LP01-D4 | 1461.56  | 35.82  | 9.31  | 340.97  | 0.00  | 2.75  | 5.11  | 25.52  | 603.71  | 3.64  | 45.04  | 13.37  | 83.13  |
| LP01-D5 | 1403.61  | 43.78  | 9.10  | 329.67  | 0.00  | 2.73  | 4.95  | 24.72  | 558.59  | 2.91  | 43.74  | 10.18  | 78.91  |
| QQ | 410.35  | 0.49  | 3.12  | 344.15  | 0.83  | 2.95  | 0.00  | 68.53  | 278.38  | 11.30  | 47.99  | 17.62  | 132.30  |
| QQ-D1 | 385.70  | 1.36  | 4.07  | 340.42  | 0.60  | 2.83  | 0.00  | 68.06  | 285.92  | 11.32  | 49.19  | 18.05  | 131.46  |
| QQ-D2 | 383.02  | 4.85  | 4.31  | 348.41  | 0.00  | 2.87  | 0.00  | 69.90  | 288.89  | 11.40  | 50.04  | 17.88  | 128.30  |
| QQ-D3 | 377.35  | 7.24  | 4.66  | 347.97  | 0.57  | 2.87  | 1.48  | 69.78  | 283.19  | 11.44  | 49.22  | 17.48  | 128.53  |

附表2 腾冲热泉样品属水平主要微生物的相对丰度

Table S2 Genus-level distribution of major microbes in the hot spring samples collected from Tengchong

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 属水平物种 | HMZ | HMZ-D1 | HMZ-D2 | HMZ-D3 | LP01 | LP01-D1 | LP01-D2 | LP01-D3 | LP01-D4 | LP01-D5 | QQ | QQ-D1 | QQ-D2 | QQ-D3 |
| *Candidatus\_*Nitrosocaldus | 8.2E-05 | 1.0E-04 | 8.6E-04 | 8.5E-03 | 9.2E-04 | 9.5E-03 | 1.5E-02 | 6.9E-02 | 1.9E-02 | 1.4E-02 | 2.1E-01 | 1.8E-01 | 4.0E-02 | 6.1E-02 |
| *Thermus* | 1.9E-03 | 8.8E-02 | 2.1E-01 | 4.6E-02 | 6.2E-03 | 2.9E-04 | 2.5E-04 | 2.3E-04 | 2.1E-04 | 1.5E-03 | 6.9E-03 | 1.1E-02 | 7.7E-04 | 7.5E-04 |
| *Hydrogenobacter* | 1.4E-04 | 4.0E-02 | 1.1E-01 | 3.7E-02 | 1.1E-02 | 7.5E-03 | 6.6E-04 | 1.5E-04 | 4.0E-04 | 4.1E-02 | 3.0E-02 | 1.8E-03 | 5.7E-04 | 6.7E-04 |
| *Chloroflexus* | 4.7E-04 | 3.9E-04 | 3.6E-02 | 6.1E-02 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 0.0E+00 | 3.5E-02 | 1.5E-02 | 1.1E-01 | 8.2E-02 |
| *Meiothermus* | 7.8E-02 | 2.8E-04 | 7.1E-04 | 7.8E-04 | 0.0E+00 | 7.4E-05 | 6.5E-05 | 4.8E-05 | 3.2E-05 | 2.1E-04 | 7.4E-03 | 3.2E-02 | 9.0E-02 | 5.2E-02 |
| *Caldimicrobium* | 4.1E-04 | 6.9E-02 | 2.2E-03 | 7.7E-04 | 3.0E-05 | 3.4E-04 | 1.8E-04 | 1.4E-04 | 9.9E-05 | 3.1E-04 | 4.3E-04 | 2.6E-04 | 3.1E-04 | 2.7E-04 |
| *Candidatus\_*Caldiarchaeum | 0.0E+00 | 1.1E-03 | 1.3E-03 | 8.2E-05 | 7.1E-04 | 3.4E-02 | 8.4E-03 | 9.2E-03 | 2.1E-02 | 5.1E-02 | 2.8E-02 | 2.8E-03 | 2.3E-04 | 2.5E-04 |
| *Fervidobacterium* | 1.6E-04 | 2.0E-02 | 4.7E-02 | 4.1E-03 | 1.5E-05 | 6.7E-04 | 2.0E-04 | 3.8E-05 | 5.9E-04 | 4.4E-04 | 5.1E-04 | 1.8E-03 | 1.6E-04 | 8.6E-05 |
| *Ignavibacterium* | 9.0E-05 | 0.0E+00 | 3.7E-04 | 1.5E-04 | 2.1E-04 | 4.0E-03 | 2.1E-02 | 4.3E-02 | 3.5E-02 | 6.6E-04 | 2.1E-04 | 6.9E-04 | 2.2E-03 | 1.9E-03 |
| *Ralstonia* | 5.7E-04 | 8.7E-04 | 3.7E-04 | 3.4E-04 | 2.1E-03 | 4.1E-04 | 3.9E-04 | 5.2E-04 | 3.5E-04 | 6.0E-04 | 1.8E-03 | 3.3E-02 | 5.0E-03 | 5.2E-03 |
| *Thermodesulfovibrio* | 7.9E-04 | 7.9E-05 | 1.2E-03 | 2.2E-02 | 1.4E-04 | 1.0E-02 | 2.4E-02 | 1.5E-02 | 2.2E-02 | 1.1E-03 | 0.0E+00 | 0.0E+00 | 4.8E-05 | 0.0E+00 |
| *Ignisphaera* | 7.3E-06 | 1.5E-04 | 5.9E-06 | 8.2E-06 | 2.2E-02 | 1.6E-04 | 1.5E-04 | 9.7E-05 | 2.0E-04 | 2.6E-04 | 2.6E-04 | 2.0E-04 | 5.3E-05 | 3.0E-05 |
| *Gemmata* | 0.0E+00 | 0.0E+00 | 2.7E-05 | 3.6E-04 | 1.0E-04 | 7.5E-05 | 1.9E-05 | 1.2E-04 | 2.9E-05 | 2.9E-04 | 1.1E-02 | 2.0E-02 | 4.9E-03 | 3.6E-03 |
| Others | 9.2E-01 | 7.8E-01 | 5.8E-01 | 8.2E-01 | 9.6E-01 | 9.3E-01 | 9.3E-01 | 8.6E-01 | 9.0E-01 | 8.9E-01 | 6.7E-01 | 7.0E-01 | 7.4E-01 | 7.9E-01 |