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| **Table S4. Sulfur substrate absorbance unitsa of stromatolitic microbial mats.** | | | |
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| **Sulfur Substrates (n = 35)** | **Type 1 Matb ± SEM** | **Type 3 Matb ± SEM** | **P-value** |
| Sulfate | 58.3 ± 12.7 | 170.3 ± 4.7 | 0.00 |
| Thiosulfate | 43.3 ± 16.4 | 141.0 ± 8.0 | 0.01 |
| Tetrathionate | 76.7 ± 11.7 | 127.7 ± 18.3 | 0.05 |
| Thiophosphate | 26.0 ± 13.6 | 119.7 ± 20.8 | 0.01 |
| Dithiophosphate | 24.3 ± 18.1 | 124.7 ± 25.3 | 0.02 |
| L-Cysteine | 85.3 ± 32.7 | 104.3 ± 27.3 | 0.34 |
| D-Cysteine | 64.7 ± 5.2 | 84.0 ± 25.7 | 0.27 |
| Cys-Gly | 56.3 ± 20.2 | 80.3 ± 20.1 | 0.22 |
| L-Cysteic Acid | 26.7 ± 13.8 | 35.3 ± 25.5 | 0.35 |
| Cysteamine | 148.3 ± 8.4 | 126.7 ± 10.9 | 0.10 |
| L-Cysteine Sulfinic Acid | 85.7 ± 20.2 | 155.7 ± 20.7 | 0.04 |
| N-Acetyl-L-Cysteine | 61.7 ± 4.4 | 87.0 ± 21.9 | 0.18 |
| S-Methyl-L-Cysteine | 55.3 ± 13.9 | 109.0 ± 27.2 | 0.09 |
| Cystathionine | 63.3 ± 11.2 | 72.0 ± 14.7 | 0.33 |
| Lanthionine | 69.7 ± 9.7 | 67.0 ± 12.1 | 0.44 |
| Glutathione | 34.7 ± 12.4 | 97.3 ± 50.7 | 0.17 |
| D,L-Ethionine | 34.0 ± 17.5 | 32.3 ± 10.5 | 0.47 |
| L-Methionine | 66.3 ± 15.6 | 154.7 ± 13.7 | 0.01 |
| D-Methionine | 58.0 ± 19.9 | 175.3 ± 10.7 | 0.01 |
| Gly-Met | 47.3 ± 13.4 | 131.7 ± 21.4 | 0.02 |
| N-Acetyl-D,L-Methionine | 52.3 ± 16.6 | 137.7 ± 31.5 | 0.05 |
| L-Methionine Sulfoxide | 38.3 ± 7.0 | 126.7 ± 18.7 | 0.01 |
| L-Methionine Sulfone | 92.0 ± 17.2 | 26.0 ± 9.3 | 0.02 |
| L-Djenkolic Acid | 39.7 ± 16.2 | 85.7 ± 29.2 | 0.13 |
| Thiourea | 51.7 ± 13.2 | 95.3 ± 13.8 | 0.04 |
| 1-Thio-b-D-Glucose | 51.3 ± 26.3 | 118.0 ± 32.8 | 0.10 |
| D,L-Lipoamide | 137.7 ± 60.6 | 210.3 ± 20.7 | 0.18 |
| Taurocholic Acid | 56.0 ± 26.9 | 77.7 ± 13.0 | 0.26 |
| Taurine | 49.3 ± 2.8 | 77.7 ± 1.5 | 0.00 |
| Hypotaurine | 44.0 ± 3.8 | 71.7 ± 9.8 | 0.05 |
| p-Aminobenzene Sulfonic Acid | 47.7 ± 28.7 | 44.0 ± 11.0 | 0.46 |
| Butane Sulfonic Acid | 72.3 ± 10.7 | 57.0 ± 11.6 | 0.19 |
| 2-Hydroxyethane Sulfonic Acid | 70.7 ± 23.4 | 73.7 ± 10.5 | 0.46 |
| Methane Sulfonic Acid | 58.0 ± 6.7 | 73.0 ± 9.3 | 0.13 |
| Tetramethylene Sulfone | 94.0 ± 11.3 | 82.3 ± 10.9 | 0.25 |
| asubstrates were considered utilized if absorbance readings were above threshold of 50 units | | | |
| bvalues represent mean absorbance unit for three replicate phenotypic microarrays | | | |