Supplement of

Community composition and seasonal changes of archaea in coarse and fine air particulate matter

Jörn Wehking et al.

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Supplementary material.

Table S1: List of air filter samples analysed for Archaea presence. While the air masses collected on MZ 11, MZ 15, and MZ 31 were sampled over 1, 5, and 5 days, respectively, all other air filter samples were taken over a 7-day period corresponding to ~3000 m³ of sampled air. Air masses analysed and sequenced with Illumina within this study are bold. For comparison the samples analysed and published in Fröhlich-Nowoisky et al (2014) were included, n.a. = not available as these air masses were not sequenced with Illumina but exclusively via Sanger sequencing.

<table>
<thead>
<tr>
<th>Sample ID</th>
<th>Sampling period</th>
<th>Number of sequences 16S Sanger (coarse, fine)</th>
<th>Number of sequences 16S Illumina (coarse, fine)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MZ 1</td>
<td>24.03.2006 - 31.03.2006</td>
<td>5</td>
<td>n.a.</td>
</tr>
<tr>
<td>MZ 2</td>
<td>31.03.2006 - 07.04.2006</td>
<td>8</td>
<td>n.a.</td>
</tr>
<tr>
<td>MZ 10</td>
<td>27.04.2006 - 02.05.2006</td>
<td>5</td>
<td>n.a.</td>
</tr>
<tr>
<td>MZ 11</td>
<td>02.05.2006 - 03.05.2006</td>
<td>7</td>
<td>3 - 80</td>
</tr>
<tr>
<td>MZ 15</td>
<td>04.05.2006 - 09.05.2006</td>
<td>9 - 6</td>
<td>195 - 81</td>
</tr>
<tr>
<td>MZ 18</td>
<td>12.05.2006 - 15.05.2006</td>
<td>7</td>
<td>n.a.</td>
</tr>
<tr>
<td>MZ 19</td>
<td>15.05.2006 - 16.05.2006</td>
<td>7</td>
<td>n.a.</td>
</tr>
<tr>
<td>MZ 21</td>
<td>17.05.2006 - 18.05.2006</td>
<td>4</td>
<td>n.a.</td>
</tr>
<tr>
<td><strong>MZ 23 blank</strong></td>
<td><strong>18.05.2006</strong></td>
<td><strong>0 - 2</strong></td>
<td></td>
</tr>
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<td>MZ 24</td>
<td>18.05.2006 - 22.05.2006</td>
<td>13</td>
<td>n.a.</td>
</tr>
<tr>
<td>MZ</td>
<td>Start Date - End Date</td>
<td>Duration</td>
<td>Total</td>
</tr>
<tr>
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<td>-------------------------</td>
<td>----------</td>
<td>-------</td>
</tr>
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<td>22.05.2006 - 23.05.2006</td>
<td>12</td>
<td>n.a.</td>
</tr>
<tr>
<td>26</td>
<td>23.05.2006 - 30.05.2006</td>
<td>12 - 6</td>
<td>301 - 103</td>
</tr>
<tr>
<td>31</td>
<td>01.06.2006 - 06.06.2006</td>
<td>8</td>
<td>208 - 5</td>
</tr>
<tr>
<td>33</td>
<td>08.06.2006 - 13.06.2006</td>
<td>10</td>
<td>n.a.</td>
</tr>
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<td>35</td>
<td>14.06.2006 - 21.06.2006</td>
<td>5 - 1</td>
<td>n.a.</td>
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<td>21.06.2006 - 22.06.2006</td>
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<td>n.a.</td>
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<td>n.a.</td>
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<td>41</td>
<td>04.07.2006 - 11.07.2006</td>
<td>5</td>
<td>19 - 284</td>
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<td>47</td>
<td>26.07.2006 - 02.08.2006</td>
<td>5</td>
<td>32 - 23</td>
</tr>
<tr>
<td>50</td>
<td>02.08.2006 - 09.08.2006</td>
<td>9</td>
<td>196 - 132</td>
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<tr>
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<td>9</td>
<td>234 - 2</td>
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<td>54</td>
<td>30.08.2006 - 06.09.2006</td>
<td>4 - 15</td>
<td>183 - 574</td>
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<tr>
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<td>18.09.2006 - 25.09.2006</td>
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<td>n.a.</td>
</tr>
<tr>
<td>62</td>
<td>02.10.2006 - 09.10.2006</td>
<td>6</td>
<td>318 - 351</td>
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<tr>
<td>63</td>
<td>09.10.2006 - 16.10.2006</td>
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<td>n.a.</td>
</tr>
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<td>N</td>
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<td>12</td>
<td>29 - 321</td>
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<td>71</td>
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<td>797 - 2</td>
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<tr>
<td>81</td>
<td>28.12.2006 - 04.01.2007</td>
<td>5</td>
<td>5 - 0</td>
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<td>8</td>
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<tr>
<td>84</td>
<td>18.01.2007 - 25.01.2007</td>
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<td>88</td>
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<td>101</td>
<td>05.04.2007 - 12.04.2007</td>
<td>11-4</td>
<td>36 - 4</td>
</tr>
</tbody>
</table>

| Sum (+contaminants) | 4285 - 2507 |
| Sum (-contaminants)  | 2180 - 161  |
Table S2: Air filter blank samples analyzed for archaeal contamination. All families found on mounting blank filters comprise together 410 sequences; families were discarded from the data if present in more than 1% of all detected archaeal sequences on the mounting blanks, i.e., the Methanoregulaceae (8.54%), Methanomassiliicoccaceae (17.56%), and the Methanobacteriaceae (72.44%).

<table>
<thead>
<tr>
<th>Family</th>
<th>Coarse</th>
<th>Fine</th>
<th>Coarse</th>
<th>Fine</th>
<th>Σ</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cenarchaeaceae</td>
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<td>1</td>
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<td>0</td>
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<td>Methanosetaeae</td>
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<td>1</td>
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<tr>
<td>Methanomassiliicoccaceae</td>
<td>0</td>
<td>0</td>
<td>72</td>
<td>0</td>
<td>72</td>
<td>17.56</td>
</tr>
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