ZymoBIOMICS® Microbial Community Standard II (Log Distribution)

- **Assess Detection Limit:** Log distributed abundance enables reliable positive identification down to 100 microbes.
- **Accurate Composition:** Cross-validated with multiple measurements.
- **Microbiome QC:** Quality control for microbiome profiling and pathogen identification.

Accurate Composition with Log Distribution

NGS analysis of the ZymoBIOMICS® Microbial Community Standard II (Log Distribution) agrees with the defined composition. DNA was extracted using the ZymoBIOMICS® DNA Miniprep kit. The library was prepared with an internal method and sequenced using an Illumina® MiSeq™. Abundance was inferred by mapping raw sequencing reads against reference genomes.
Assess Performance of 16S Sequencing

The 16S sequencing results from the ZymoBIOMICS® Microbial Community Standard II (Log Distribution) were analyzed using Qiime 1.9.0 and Dada2 analysis pipelines. DNA was extracted using the ZymoBIOMICS® DNA Miniprep kit. A library of 16S V3-V4 region was prepared with the Quick-16S™ NGS Library Prep kit. Sequencing was performed using an Illumina® MiSeq™ generating 93,762 paired-end reads (2 x 300 bp). Dada2 showed no false positives. The Qiime pipeline predicted 9 false positives, but had a lower detection limit identifying the presence of L. fermentum while Dada2 did not.

Assess Performance of Shotgun Metagenomic Sequencing

The shotgun sequencing data of the ZymoBIOMICS® Microbial Community Standard II (Log Distribution) were analyzed using three different bioinformatics pipelines, MetaPhlan2, mOTU, and a commercial program. The library prepared with an internal method was sequenced using an Illumina® MiSeq™. The three analysis pipelines had similar detection limits down to a relative genome copy number abundance of ~0.01% (L. fermentum abundance). MetaPhlan2 and the commercial program led to false positives; while the mOTU pipeline made no false predictions, it was unable to detect yeast.

<table>
<thead>
<tr>
<th>Product</th>
<th>Cat. No.</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZymoBIOMICS® Microbial Community Standard II (Log Distribution)</td>
<td>D6310</td>
<td>10 preps</td>
</tr>
<tr>
<td>ZymoBIOMICS® Microbial Community DNA Standard II (Log Distribution)</td>
<td>D6311</td>
<td>220 ng</td>
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<tr>
<td>Human HCT116 DKO Non-Methylated DNA</td>
<td>D5014-1</td>
<td>5 μg</td>
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