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## Supporting Information

# Ethanol Production Using *Zymomonas mobilis* and In Situ Extraction in a Capillary Microreactor

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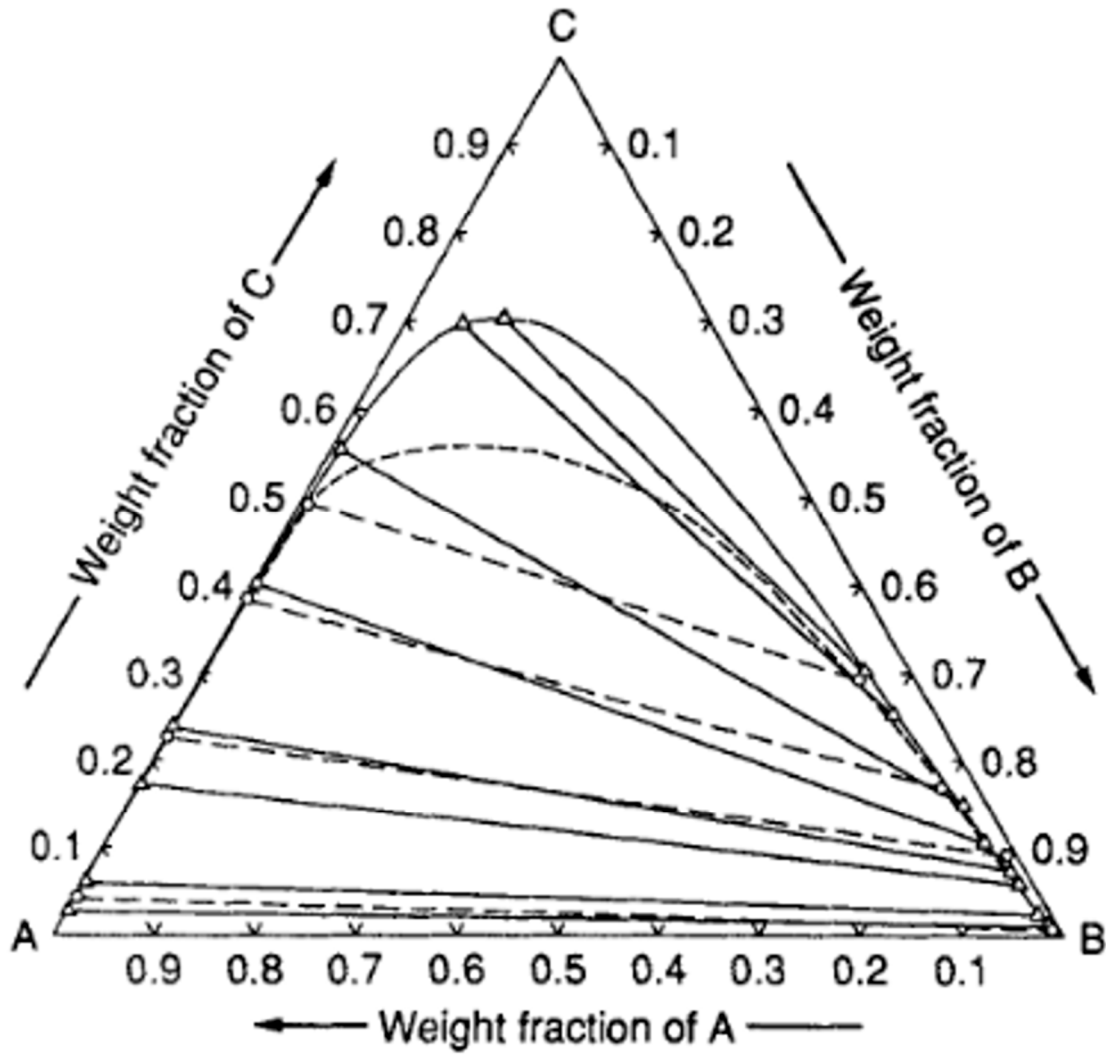
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**Table S1:** Volumes of ethanol (EtOH), oleyl alcohol (OA) and water for the ternary diagram.

Measurement	V <sub>EtOH</sub> [mL]	V <sub>OA</sub> [mL]	V <sub>H<sub>2</sub>O</sub> [mL]
1	4.9	0.1	60
2	4.7	0.3	22.4
3	4.5	0.5	7.4
4	4.3	0.7	4.5
5	4.1	0.9	4
6	3.9	1.1	2.8
7	3.7	1.3	2.0
8	3.5	1.5	1.8
9	3.3	1.7	1.7
10	3.1	1.9	1.6
11	2.9	2.1	1.3
12	2.7	2.3	1.1
13	2.5	2.5	1.0
14	2.3	2.7	0.8
15	2.1	2.9	0.7
16	1.9	3.1	0.6
17	1.7	3.3	0.4
18	1.5	3.5	0.3
19	1.3	3.7	0.2
20	1.1	3.9	0.1
21	1.8	8.2	0.1
22	1.4	8.6	0.05

**Table S2:** Volume fractions of ethanol (EtOH), oleyl alcohol (OA) and water for the ternary diagram.

Measurement	$\varphi_{\text{EtOH}}$ [-]	$\varphi_{\text{OA}}$ [-]	$\varphi_{\text{H}_2\text{O}}$ [-]
1	0.0754	0.0015	0.9231
2	0.1715	0.0109	0.8175
3	0.3629	0.0403	0.5968
4	0.4526	0.0737	0.4737
5	0.4556	0.1000	0.4444
6	0.5000	0.1410	0.3590
7	0.5286	0.1857	0.2857
8	0.5147	0.2206	0.2647
9	0.4925	0.2537	0.2537
10	0.4697	0.2879	0.2424
11	0.4603	0.3333	0.2063
12	0.4426	0.3770	0.1803
13	0.4167	0.4167	0.1667
14	0.3966	0.4655	0.1379
15	0.3684	0.5088	0.1228
16	0.3393	0.5536	0.1071
17	0.3148	0.6111	0.0741
18	0.2830	0.6604	0.0566
19	0.250	0.7115	0.0385
20	0.2157	0.7647	0.0196
21	0.1782	0.8119	0.0099
22	0.1393	0.8557	0.0050



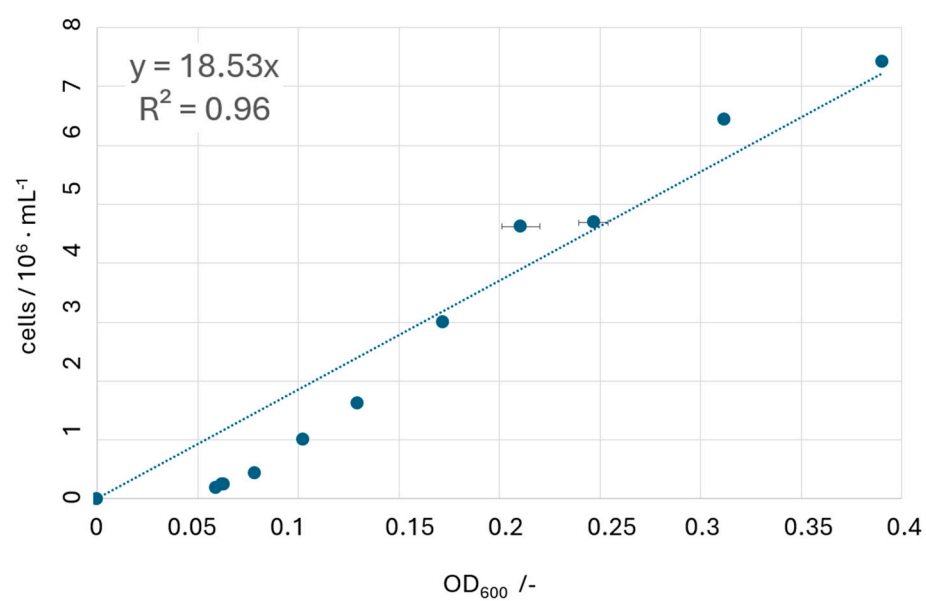
**Figure S1:** Ternary phase diagram for ethanol, Water, and Adol@85 NF system at 25 °C (A: water, B: Adol@NF, C: ethanol). Solid lines: UNIFAC-LLE predictions, dashed lines: experimental [30].

$$Y_{P/S,theo} = \frac{m_{EtOH}}{m_{Glucose}} \quad (S1)$$

$$n_{Glucose} = \frac{m_{Glucose}}{M_{Glucose}} \rightarrow 1 \text{ g (Glucose)} \triangleq 0.00551 \text{ mol}$$

$$\frac{n_{EtOH}}{n_{Glucose}} = 2 = \frac{n_{EtOH}}{0.00551 \text{ mol}} \rightarrow n_{EtOH} = 0.01102 \text{ mol} \triangleq 0.51144 \text{ g}$$

$$Y_{P/S,theo} = 0.51144$$



**Figure S2.** Correlation between cells and OD<sub>600</sub> for *Z. mobilis*. Experiments were performed in triplicates.