Trial 1

Protocol:

Day 1 (4/10/06)
- Inoculate single colony in ~10 mL LB.
- Grow at 37°C for 1 day (~20 hours).
  - Next morning, o/n culture cell density ~ 10^8 cfu/mL

Day 2 (4/11/06)
- Morning: dilute.
  - 5 mL o/n + 50 mL fresh LB
- Grow at 37°C for 4-5 hours.
  - Afternoon, culture cell density ~ 3 x 10^10 cfu/ml
- Afternoon: dilute culture first in LB then in distilled water
  - 1 µL culture in 1 mL fresh LB
    - Concentration ~ 3 x 10^7 cfu/ml
  - 1 µL diluted culture in 40 mL distilled water
    - Concentration ~ 750 cfu/ml
- Run water sample through system
  - Before and after run - concentration quantification
    - Plate 100 µL of sample (no dilution, 1:2, 1:4) on LB.
  - Between runs, take system apart and clean with ethanol
- Collect plates and let grow at 37°C.

Day 3 (4/12/06)
- Count colonies on plates.

Results:

<table>
<thead>
<tr>
<th>Experiment</th>
<th>#1: no shim</th>
<th>#2: (-) shim</th>
<th>#3: (+) shim</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dilution</td>
<td>Pre</td>
<td>Post</td>
<td>Pre</td>
</tr>
<tr>
<td>1:1</td>
<td>9*</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>1:2</td>
<td>10</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>1:4</td>
<td>13</td>
<td>11</td>
<td>7</td>
</tr>
</tbody>
</table>

*contamination
Conclusions:

- Bacterial count too low to deduce any significant difference.
- Adjust dilution step in Day 2 afternoon to increase bacterial count ~1000 cfu/plate.
Trial 2

Protocol:

Day 1 (4/17/06)
- Inoculate single colony in 10 mL LB.
- Grow at 37°C for 1 day (~20 hours).

Day 2 (4/18/06)
- Morning (8:45AM): dilute 1/10.
  - 5 mL o/n + 45 mL fresh LB
- Grow at 37°C for 4-5 hours.
  - Afternoon, culture cell density ~ 4 x 10^9 cfu/ml
- Afternoon (2PM): dilute culture first in LB then in distilled water
  - 1 µL culture in 10 µL fresh LB
    - Concentration ~ 4 x 10^8 cfu/ml
  - 1 µL diluted culture in 40 mL distilled water
    - Concentration ~ 10^4 cfu/ml
- Run water sample through system
  - Before and after run - concentration quantification
    - Plate 100 µL of sample (undiluted, 1:2, 1:4) on LB.
  - Between runs, take system apart and clean with ethanol
- Collect plates and let grow at 37°C.

Day 3 (4/19/06)
- Count colonies on plates.

Experiment:
1. SS no shim
2. SS 1 shim
3. SS 2 shims