**Table 1: 100-fold Serial Dilution Results**

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| --- | --- | --- | --- | --- |
| **Dilution** | **Agar type** | **Colonies counted** | **Conversion factor** | **Colonies/ml** |
| 10-2 | Nutrient | Lawn | × 103 | lawn |
| 10-4 | Nutrient | 60 | × 105 | 6000000 |
| 10-6 | Nutrient | 2 | × 107 | 20000000 |
| 10-8 | Nutrient | 0 | × 109 | 0 |
| 10-2 | Nutrient + tet | Lawn | × 103 | Lawn |
| 10-4 | Nutrient + tet | 45 | × 105 | 4500000 |
| 10-6 | Nutrient + tet | 1 | × 107 | 10000000 |
| 10-8 | Nutrient + tet | 0 | × 109 | 0 |

There were more bacteria/colony on the plates without antibiotics than they were on the plates with antibiotics. This indicates that tetracycline prevented the growth of bacteria. I observed that two species of bacteria are unaffected by tetracycline. According to [TetrHYPERLINK "http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0CB4QFjAA&url=http%3A%2F%2Fwww.ncbi.nlm.nih.gov%2Fpmc%2Farticles%2FPMC99026%2F&ei=0qjTVMDmI8jbsATetYKQAQ&usg=AFQjCNHPyaSsM8CbkSpp16R14ZAoTCCUbw"acycline Antibiotics](http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&uact=8&ved=0CB4QFjAA&url=http%3A%2F%2Fwww.ncbi.nlm.nih.gov%2Fpmc%2Farticles%2FPMC99026%2F&ei=0qjTVMDmI8jbsATetYKQAQ&usg=AFQjCNHPyaSsM8CbkSpp16R14ZAoTCCUbw)  article, tetracycline kills inhibits protein synthesis by preventing the attachment of aminoacyl-tRNA to the ribosomal acceptor (A) site. If bacteria are unable to undergo protein synthesis, this could account for why we only had gram negative bacteria and not gram positive

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Letter | Colony label | Plate type | Colony description | Cell description | Gram + or Gram - | Additional notes |
| A | 10-2 | Tetracycline | Smooth, glistening, rhizoid colony. Flat/convex | n/a | Gram - | 0.1-0.4cm |
| B | 10-4 | No tetracycline | Irregular, raised, smooth, shiny | n/a | Gram - | 0.3cm |
| C | 10-4 | Tetracycline | Circular. Smooth, shiny colony | n/a | Gram - | 0.5cm |
| D | 10-2 | No tetracycline | Irregular, smooth, raised shiny | n/a | Gram - | 8.5cm |

The above table shows the characteristics of bacteria from agar plate observed under a microscope. We were unable to do cell description due to time management and difficulties viewing bacteria under the microscope.