

Klearsen Corporation

Peaceful Mountain Bronchiadyne

Testing summary *Pseudomonas aeruginosa*

Pseudomonas aeruginosa are gram negative bacilli that live in soil and water. They prefer moist areas and are known to cause problems in hospital irrigation fluids for certain equipment such as dialysis. The bacteria are also found in the human intestine. *P. aeruginosa* are considered opportunistic pathogens and cause infections when the skin has been compromised or the immune system has been weakened. The bacteria are a common problem for people with cystic fibrosis.

Common Infections and Current Treatment

Pseudomonas aeruginosa can cause numerous types of infections and target areas of the body that have been compromised. They cause urinary tract infections, respiratory infections, bone and joint infections, blood infections, gastrointestinal infections, dermatitis, and soft tissue infections. Generally *P. aeruginosa* can cause serious infections in patients with cancer, cystic fibrosis, and burn wounds.

Bronchiadyne Lab Tests

Test 1: Establishing the minimum time needed to kill 100% of *Pseudomonas aeruginosa* at varying concentrations

This test was designed to determine the time needed to kill a concentrated culture of *P. aeruginosa* with Bronchiadyne at 3 different concentrations.

Methods:

Two concentrations of Bronchiadyne were made. The original concentration of 50 ppm silver was diluted 1:1 with DI water creating a 25 ppm silver solution. The 25 ppm solution was then diluted 1:1 with DI water creating a 12.5 ppm silver solution. Five milliliters was put into culture tubes and incubated to 37° C. Once 37° C was reached, 100 µl of a 10⁸ CFU/ml culture was added and incubated at 37° C for 10, 20, and 30 minutes. After incubation, 100 µl of the culture containing bacteria was plated on LB agar plates and grown overnight at 37° C. Plates were then counted for bacterial colonies.

Results:

Colonies counted

	10 minutes	20 minutes	30 minutes
12.5 ppm	0	0	0
25 ppm	0	0	0
50 ppm	0	0	0

All concentrations at all times had 0 colonies.

Conclusion:

This test shows that Bronchiadyne easily kills *P. aeruginosa*. A 10 minute incubation time with a 12.5 ppm silver solution is sufficient to kill a concentrated solution of *P. aeruginosa*. This test does not give us the minimum inhibitory concentration at the incubation times. It can be concluded that Bronchiadyne does kill *P. aeruginosa* at low concentrations within 10 minutes of exposure.