

Institute of Microbiology and Immunology National Yang-Ming University

Address : 155, Li-Nong St., Sec.2, Peitou, Taipei, Taiwan, R.O.C.
TEL : 886-2-2826-7110 FAX : 886-2- 2821-2880



Bactericidal Activity for BIO-ALPOSOL

1. Objective:

Evaluation of bactericidal activity for BIO-ALPOSOL on *Streptococcus pneumoniae*.

2. Specimen:

BIO-ALPOSOL solution (provided by GreenTech Biotechnology Environment Co., LTD., Taipei, Taiwan) .

3. Tested Strain:

One tested strain was selected for this testing (Table 1) . The concentration of the tested strain is approximately 1.5×10^3 CFU/mL. The name of tested strain, diluted broth and agar used for total viable count (spreading method) are listed as followed.

Table 1. Tested strain and agar used for dilution and total viable count

No.	Name of tested strain	Broth used for dilution	Agar used for total viable count
1	<i>Streptococcus pneumoniae</i>	Mueller-Hinton broth	5% sheep blood TSA agar

4. Tested Procedures:

- (1) Prepare bacterial suspension for each strain, and its colony concentration is adjusted to McFarland 0.5 (approximately to 1.5×10^8 CFU/mL) , after that ten-fold dilution are carried out, and make the suspected colony concentration to approximately 1.5×10^3 CFU/mL
- (2) Two mL of tested strain was added to the test tube containing 2 mL Mueller-Hinton broth that containing 2mL of BIO-ALPOSOL solution, after reaction for 15 minutes and 60 minutes, 0.2 mL of Mueller-Hinton broth from the test tube was aspirated with sterile 2-mL pipet respectively.



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and put it on TSA agar plate.

- (3) In order to determine its total viable count, we used the spreading method to perform twice.
- (4) All culture plates were incubated at 35° C incubator for 48 hours, after that, the total viable count can be obtained by calculating the colony appeared on plate.

5. Results:

Tested groups /Conditions	Reactive time			
	Original concentration		1:100	
	Residual for bacterial count after 15 mins(CFU)/killing rate	Residual for bacterial count after 60 mins(CFU)/killing rate	Residual for bacterial count after 15 mins(CFU)/killing rate	Residual for bacterial count after 60 mins(CFU)/killing rate
Tested strain/ Bacterial concentration <i>Streptococcus pneumoniae</i> /1.78×10 ³ CFU/mL	0(100%)	0(100%)	0(100%)	0(100%)

6. Conclusion:

In conclusion, this study has proved that BIO-ALPOSOL solution is an effective and rapid bactericidal agent against *Streptococcus pneumoniae*, whether it is in original concentration or with 1:100 diluted concentration, and BIO-ALPOSOL can kill 1.78×10³ CFU bacteria within 15 minutes.

Laboratory Director: **Laboratory Director**
Wen-chenng Tsai, Ph. D.

Researcher: **RDS Manager**
Michael Lin

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