Test No.2018D-BT-441

TEST REPORT

Requested by : NON Co., Ltd.

Test samples : Described in test report

Test item : Anti-bacterial test

Study director : Shinichi Ri

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Anti-bacterial test

1. Purpose

The test was conducted to estimate the anti-bacterial activity of the sample.

2. Test samples

DR.CLO PP10731SR (Antimicrobial 1.0%)

3. Test bacteria

Staphylococcus aureus	NBRC 13276
Escherichia coli	NBRC 3972
Salmonella enterica	NBRC 100797
Klebsiella pneumoniae	NBRC 13276

4. Test Method

The submitted samples were tested in accordance with Fig.1.

5. Test Results

The results of the anti-bacterial test of the samples were shown in table 1~4 and the results of concentrations of chlorine dioxide were shown in table 5.

Test bacteria was cultured on Nutrient agar and
prepared bacterial suspension with saline (10^6/mL)

↓

Swipe the sample with ethanol

↓

Inoculate the 0.5 mL of bacterial suspension to cotton strips (5cm×5cm)

↓

Sample was set in the center of ceiling of test chamber (1 m^3) and
cotton strips were set in the center of bottom of test chamber (1 m^3)

↓

Each measurement time (0, 1, 2, 3, 4, 5, 22, 23 and 24hours) after setting,
concentration of chlorine dioxide was measured by instrument provided by client

↓

After 24 hours from setting, mix the cotton strips and 10 mL of SCDLP broth

↓

Enumerate the viable cell count of SCDLP broth in accordance with
dilution culture method

Fig.1. Test procedure

Table 1. Results of anti-bacterial test against *Staphylococcus aureus*

Test samples	Viable cell (CFU／strips)	
	Initial	After incubation
DR.CLO	1.7×10^6	7.0×10^2 (99.96%)
Control	1.7×10^6	6.2×10^3

The viable cell count described in table is average of n3.
The percentage in parentheses is the rate of decrease comparing test samples from controls.

Table 2. Results of anti-bacterial test against *Escherichia coli*

Test samples	Viable cell (CFU／strips)	
	Initial	After incubation
DR.CLO	2.7×10^6	－ (>99.99%)
Control	2.7×10^6	6.7×10^3

The viable cell count described in table is average of n3.
The percentage in parentheses is the rate of decrease comparing test samples from controls.
－: Not detected by incubating (<100 CFU／strips)

Table 3. Results of anti-bacterial test against *Salmonella enterica*

Test samples	Viable cell (CFU／strips)	
	Initial	After incubation
DR.CLO	2.7×10^6	－（＞99.99％）
Control	2.7×10^6	2.3×10^4

The viable cell count described in table is average of n3.
The percentage in parentheses is the rate of decrease comparing test samples from controls.
－: Not detected by incubating (<100 CFU／strips)

Table 4. Results of anti-bacterial test against *Klebsiella pneumoniae*

Test samples	Viable cell (CFU／strips)	
	Initial	After incubation
DR.CLO	1.0×10^6	－（＞99.99％）
Control	1.0×10^6	7.0×10^2

The viable cell count described in table is average of n3.
The percentage in parentheses is the rate of decrease comparing test samples from controls.
－: Not detected by incubating (<100 CFU／strips)

Table 5. Results of concentration of chlorine dioxide

Measurement time (hours)	Concentration of chlorine dioxide (ppm)
0	－
1	－
2	－
3	－
4	－
5	－
22	－
23	－
24	－

－：Below detection limit