

หน่วยชันสูตรโรคสัตว์

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**Efficiency of disinfecting by Ionized Oxygen
(WATERLIFE, LUWATEC, Germany) to
Avian Influenzavirus subtype H5N1**

Owner Monarch Technology Co., Ltd.
Address 51/48 Moo 7, Krisda Heritage, Bangna Trad Km.8, Bangkaew
Bangplee, Samutprakarn 10540

TEST METHOD: The injector part of the WATERLIFE was immersed in the container filled with 10 liters of the distilled water. The WATERLIFE was turned on for 3 minutes before starting the test. The virus stock was added in the container to yield a concentration of 2.5×10^5 TCID₅₀/ml and 5.25×10^5 TCID₅₀/ml for the test number 1 and 2 respectively. The virus was allowed contact with the ionized oxygen at room temperature (25°C) for 15, 30, 45, 60, 90, and 120 minutes in the test no.1 and 5, 10, 15, and 30 minutes in the test no.2. The solution was collected, serially 10 fold dilution were made from 1:10¹ to 1:10¹¹ and then inoculated onto the confluence MDCK cell in the microtiter plates. After 72 hrs of incubation, the cultures were observed to determine the remaining infectious virus titers. The remained virus in the solution will cause the CPF (round up or lysis) of MDCK cell. Virus titers were compared to the positive control and were calculated percents of inhibition.


RESULTS: The in vitro effect of the ionized oxygen (WATERLIFE) to avian infuenzavirus subtype H5N1 is summarized in the table below. The result showed that the WATERLIFE system was capable of inhibiting the virus more than 90% within 10 minuets compared to the positive control.

Table 1. Virus titer (TCID₅₀/ml) and percents of inhibition of the avian influenzavirus A/chicken/Thailand/C1207DX1/04(H5N1) in test samples compared with positive control (2.5×10^5 TCID₅₀/ml for test no.1 and 5.25×10^5 TCID₅₀/ml for test no. 2)

Test No.		Exposure time (minutes)								
		0	5	10	15	30	45	60	90	120
1	Test samples	2.5×10^5			<6.6	<6.6	<6.6	<6.6	<6.6	<6.6
	% inhibition	0			>90	>90	>90	>90	>90	>90
2	Test samples	5.25×10^5	5.25×10^5	5.25×10^3	1.3×10^1	< 1.3×10^1				
	% inhibition	0	0	>90	>90	>90				

Note: Upon limit of the test procedure, the virus titer could not be read at lower than 6.6 and 1.3×10^1 TCID₅₀/ml for test no.1 and no 2 respectively.

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