

No. 17071979001-0401

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Date issued: August 30, 2017

**REPORT**

**Client:** Haenim Co., Ltd  
15, Saryeom-ro, 21beon-gil, Seo-gu, Incheon, Republic of Korea.

**Sample(s):** Haenim UV Sterilizer (Model: HN-03 series)

**Title:** Virus Inactivation Test

**Received date of sample(s):** July 10, 2017

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Signed for and on behalf of JFRL



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Section of Analysis Documentation

*Sep. 07, 2017*

Date

## Virus Inactivation Test

### 1. Client

Haenim Co., Ltd

### 2. Sample

Haenim UV Sterilizer (Model: HN-03 series)

### 3. Outline of the method

*Feline calicivirus* suspension was poured into a petri dish and used as a test specimen. It was placed in the sample at the position specified by the client. After the sample was allowed to operate under the conditions specified by the client, the virus infectivity titer of the test specimen was determined.

*Feline calicivirus* is commonly used as a surrogate for *Norovirus*, which cannot be cultured routinely.

### 4. Results

Table 1 shows the results of the virus infectivity assay. Tables 2 and 3 show the cell and media used in the test and the test conditions, respectively. Photos 1 and 2 show the examples of the positions of the test specimens.

Table 1: Virus infectivity titer of test specimen

Test organism	Object	Position of test specimen	log TCID <sub>50</sub> /mL
<i>Feline calicivirus</i> *	Before operation	—	7.3
	After 10 minutes of operation	Upper row	<1.5
		Lower row	<1.5

TCID<sub>50</sub>: Median tissue culture infectious dose

<1.5: Not detected

Virus suspension: The culture solution was diluted 100-fold with purified water.

\* A surrogate for *Norovirus*

Table 2: Cell and media used in test

Test cell	CRFK cells (Dainippon Pharmaceutical Co., Ltd.)
Cell culture medium	Eagle's MEM "Nissui"(1) containing 10 % of fetal bovine serum (Nissui Pharmaceutical Co., Ltd.)
Cell support medium	Eagle's MEM "Nissui"(1) containing 2 % of fetal bovine serum

Table 3: Test conditions

Test virus	<i>Feline calicivirus</i> F-9 ATCC VR-782
Virus suspension	The virus culture solution after cell incubation was centrifuged and the supernatant liquid was diluted 100-fold with purified water.
Test specimen	A 2-mL portion of the virus suspension was poured into a petri dish (φ60 mm).
Test procedure	The test specimen was placed at the position specified by the client (just under the ultraviolet ray lamp; the upper and lower rows) in the sample. The sample was allowed to operate for 10 minutes under the conditions specified by the client.
Determination method for virus infectivity assay	TCID <sub>50</sub> method



Photo 1. Example of position of test specimen: Upper row



Photo 2. Example of position of test specimen: Lower row

\*\*End of Report\*\*