

# Study Report

Issue: NB1512003

February 29, 2016

To: RAYCOP JAPAN INC.

**AIKEN** Co., Ltd.

2-710 Amakoda, Moriyama-ku, Nagoya-shi  
(Handa Office) 2-65 Hanada-cho,  
Handa-shi, Aichi Prefecture  
TEL (0569) 28-4738 Zip code: 475-0088

<b>Test subject</b>	Allergen vacuum	<b>Reception method</b>	Received (2015/12/03)
<b>Name of the subject (Trade name, etc.)</b>	RAYCOP RS2-100		
<b>Study Name</b>	<b>Test 2</b> UV mite hatching rate lessening validation test		
<b>Test sample</b>	<i>Dermatophagoides pteronyssinus</i> Tokyo Women's Medical University		
<b>Test method</b>	Method according to the test outsourcing proposal 20151015 (See Attachment)		
(Note) Collected and brought-in samples are described as appointed by the requestor.			

Here is a report on study results of the above sample.

	UV irradiation time			
	0 second	5 seconds	60 seconds	300 seconds
Hatching rate (4 days later)	36.7%	0.0%	0.0%	0.0%
Hatching rate (7 days later)	96.7%	16.7%	0.0%	0.0%
Hatching rate (14 days later)	96.7%	20.0%	0.0%	0.0%
(Note) After UV irradiation, mite eggs were to be set still in 25°C, 75%RH, dark environment.				
[Remarks]				

Study director: Minoru Sugiura



## Attachment Test method

Take mite eggs out of the mite medium (*Dermatophagoides pteronyssinus*) using menso fude (or a fine tip brush)<sup>(1)</sup>

|

Place 10 mite eggs on the center of a glass slide (approximately 3 mm × 3 mm)

|

Turn on the power to stabilize UV

Insert glass slide centering right below the UV light, perform UV irradiation for certain amount of time on mite eggs <sup>(2)(3)</sup>

|

After irradiation for a certain amount of time, store glass slide in a container under 25°C, dark environment<sup>(4)</sup>

|

Observe egg-hatching process under a stereoscopic microscope 4, 7, and 14 days later

- (1) Eggs that had over processed and had become cloudy were excluded.
- (2) Distance between UV light and glass slide: approximately 25 mm
- (3) Irradiation time: 0 second, 5 seconds, 60 seconds, 300 seconds. Repetition of tests: 3 times
- (4) Volume of the container: approximately 9.6 L. Stored in a small container with saturated saline for humidity conditioning.

### ○ Calculation method of hatching rate

$$H_p = \frac{H}{30} \times 100$$

H<sub>p</sub>: Hatching rate (%)

H: Number of the hatched (total from 3 repeated tests)

30: Number of test eggs (10 eggs × 3)

## Attachment Study result

Table 1 UV irradiation time: 5 seconds

Date of observation	Number of test eggs (eggs)	Number of the hatched eggs				Hatching rate (%)
		[1]	[2]	[3]	Total	
4 days later	10	0	0	0	0	0.0
7 days later	10	1	3	1	5	16.7
14 days later	10	1	3	2	6	20.0

Table 2 UV irradiation time: 60 seconds

Date of observation	Number of test eggs (eggs)	Number of the hatched eggs				Hatching rate (%)
		[1]	[2]	[3]	Total	
4 days later	10	0	0	0	0	0.0
7 days later	10	0	0	0	0	0.0
14 days later	10	0	0	0	0	0.0

Table 3 UV irradiation time: 300 seconds

Date of observation	Number of test eggs (eggs)	Number of the hatched eggs				Hatching rate (%)
		[1]	[2]	[3]	total	
4 days later	10	0	0	0	0	0.0
7 days later	10	0	0	0	0	0.0
14 days later	10	0	0	0	0	0.0

Table 4 UV irradiation time: 0 second (comparative control compartment)

Date of observation	Number of test eggs (eggs)	Number of the hatched eggs				Hatching rate (%)
		[1]	[2]	[3]	total	
4 days later	10	4	4	3	11	36.7
7 days later	10	10	9	10	29	96.7
14 days later	10	10	9	10	29	96.7