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**To RAYCOP JAPAN INC.**

# Test Report

A company seal

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**1. Test name** Test of dust mite allergen removal effect by Raycop UV vacuum

**2. Specimen**

| | |
|---|---|
| Specimen | RSC |
| Control | No suction |

**3. Test summary** 50 mg of house dust was sprayed on the outer fabric surface or inside (surface of the inner cotton) of bedding (hereafter spraying region), and suction was performed for the spraying region using the specimen by making fixed times of round trips at 20 cm/second of speed. Regarding spraying of the inside of the bedding, suction was performed from the top of the outer fabric. After that, allergen was extracted from the spraying region (hereafter extraction liquid) and the amount of residual allergen was measured by ELISA. The same treatment was performed for the control except with suctioning.

**4.Test conditions**

Operation: Max mode with UV head (UV light on)

Suction target Pseudo-bedding contaminated with allergen

Bed pad[*1]: Outer fabric: polyester 100%

Inner cotton: polyester 100%

[*1]Bedding that was normally used for tests in ITEA was utilized.

| | |
|---|---|
| Target allergen | Allergen derived from excrement of Dermatophagoides farina, Der f 1 |
| Target allergen configuration | House dust (special ordered item, made by ITEA) |
| Spraying amount | House dust 50 mg |
| Suction speed | 20 cm/second |

Suction time

Equivalent of 3 min/$m^2$ (Successive 3 round trips per spraying region, 3 min/$m^2$)

Equivalent of 4 min/$m^2$ (Successive 4 round trips per spraying region, 4 min/$m^2$)

Equivalent of 5 min/$m^2$ (Successive 5 round trips per spraying region, 5 min/$m^2$)

| | |
|---|---|
| The number of samples | n=3 |
| Measurement of allergen | Sandwich ELISA*1 |

*1 Samples for measuring were prepared by diluting extraction liquid with a diluent for ELISA measurement at a proper dilution ratio.(Product No 10205 by ITEA)[*2] *2 Optimized for the test

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Evaluation method An allergen residual rate was obtained using the following formula.

Allergen residual rate (%) = X /Y×100

X: The amount of residual allergen per spraying region after suction (ng)

Y: The amount of residual allergen per spraying region in the control (ng)

## 5. Results

Table 5-1. The amount of residual allergen per spraying region (Der f 1) and allergen residual rate

| Part sprayed | Test classification | n | Der f1 (ng) (ng) | Mean value (ng) | Standard deviation | Allergen residual rate (%) |
|---|---|---|---|---|---|---|
| Surface of bedding | Euivalent of 3 min/m² (3 round trips) | 1 | 25.20 | 31.40 | 11.3 | 0.4 |
| | | 2 | 24.60 | | | |
| | | 3 | 44.40 | | | |
| | Equivalent of 4 min/m² (4 round trips) | 1 | 36.00 | 25.00 | 10.3 | 0.3 |
| | | 2 | 23.40 | | | |
| | | 3 | 15.60 | | | |
| | Equivalent of 5 min/m² (5 round trips) | 1 | 84.71 | 30.40 | 9.8 | 0.4 |
| | | 2 | 46.98 | | | |
| | | 3 | 53.43 | | | |
| | No suction | 1 | 12993.96 | 8418.20 | 95.1 | - |
| | | 2 | 13479.51 | | | |
| | | 3 | 14255.64 | | | |
| Inside of bedding (Surface of the inner cotton) | Equivalent of 3 min/m² (3 round trips) | 1 | 6585.60 | 6578.40 | 276.7 | 82.7 |
| | | 2 | 6298.20 | | | |
| | | 3 | 6851.40 | | | |
| | Equivalent of 4 min/m² (4 round trips) | 1 | 6464.40 | 6323.20 | 245.1 | 79.5 |
| | | 2 | 6465.00 | | | |
| | | 3 | 6040.20 | | | |
| | Equivalent of 5 min/m² (5 round trips) | 1 | 6032.40 | 6277.60 | 215.4 | 78.9 |
| | | 2 | 6364.20 | | | |
| | | 3 | 6436.20 | | | |
| | No suction | 1 | 7753.80 | 7957.80 | 178.5 | - |
| | | 2 | 8034.00 | | | |
| | | 3 | 8085.60 | | | |

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**6. Additional statement**

Results of this study cannot be compared with study results that were obtained by a different experimental system or condition.

Test start date: March 9, 2020
Test end date: March 23, 2020

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