

Test Report 6118038-02

10.08.2023

**Determination of the percentage
of hair breakage after treatment
with hair care products**

Sponsor:
MARC ANTHONY COSMETICS
VAUGHAN ON L4K 0H9



Test Report 6118038-02 dated 10.08.2023
Sponsor: Marc Anthony Cosmetics
Test Items: 220074542 - 220074548

Test Report 6118038-02

Test Description: Determination of the percentage of hair breakage by repeated combing of damaged hair tresses compared with and without product treatment.

Sponsor: **Marc Anthony Cosmetics**
100, NEW PARK PLACE SUITE 810
VAUGHAN ON L4K 0H9
Canada

Date of Order: 08.03.2022

Date of Report: 10.08.2023

Order-No.: 6118038

Test Period: April-May 2022

Test Facility: SGS Institut Fresenius GmbH
Im Maisel 14
D-65232 Taunusstein (Germany)

Study Director: Dr. Ines Sellami
(Leader Hair & Skin Care - Performance Testing Lab)

Technician: Marion Bücher
(Laboratory- Hair & Skin Tests)

Test Items:

220074542 Marc Anthony, Argan Oil Hydrating Shampoo
220074543 Marc Anthony, Argan Oil Hydrating Conditioner
220074544 Marc Anthony, Grow Long Super Fast Strength Shampoo
220074545 Marc Anthony, Grow Long Super Fast Strength Conditioner



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Test Items (continued):

220074546 Marc Anthony, Grow Long Super Fast Strength Leave-in
220074547 Marc Anthony, Grow Long Strengthening Anti-Breakage Oil
220074548 Marc Anthony, Grow Long Restoring Anti-Breakage Mask



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Study Objective

The aim of the study was to determine the hair breakage with and without treatment off hair tresses with different shampoos.

Summary

Under the chosen test conditions, all regarded test item **220074542**, **2200745423**, **20074544**, **220074545**, **220074546**, **220074547** and **220074548** showed a reduction of hair breakage. The reduction was significant less compared to the reference.

Leads with the products **220074542** with 56.1%, **2200745423** with 88.1%, **220074544** with 83.6%, **2200745425** with 77.7%, **220074546** with 77.1%, **2200745427** with 96.6% and **220074548** with 72.5% less hair breakage compared to the reference.

We hope to have served you satisfactorily with our investigations. We are at your disposal for any further requests.

Yours sincerely,

SGS INSTITUT FRESENIUS GmbH

DocuSigned by:
Ines Sellami

i. V. Dr. Ines Sellami
(Leader Hair and Skin Care – Performance Testing Lab)

DocuSigned by:
Denise Seibel

i. A. Denise Seibel
(Customer Services Assistant)

Attachments:

- Test Method
- Results



Test Report 6118038-02 dated 10.08.2023
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ATTACHMENT

1 Test Method

For each test item, 10 hair tresses (European hair, weight: 1.0 g, length: 11 cm) were used to determine hair breakage with and without treatment with the respective test items. Additional 10 hair tresses were used as reference.

First, the damaged tresses have been produced. The hair tresses were chemical cleaned and additional bleached. The damaged tresses served without the test item, as a reference after additional 48 hours resting period.

After drying and a resting period of at least 48 hours under standard climatic conditions (22 ± 1 ° C, $50 \pm 5\%$ rH), the respective test items were applied on the damaged hair tresses. The hair tresses were treated with a double wash (for shampoo) with 0.25 ml / g hair of each test article by one minute foaming. After resting for 2 minutes, the test item was rinsed with water for 1 min (37 ° C, 10 - 12 ° dH). Regarding hair mask the used conditions were the following: amount: 0,5 g / 1 g Hair, leave in time: 5 min and rinse out time: 1 min.

After drying overnight, 10 hair tresses were subjected to a defined combing process under standard climatic conditions in the combing equipment. The hair tresses rotated around their own axis and were combed in total 20.000 times. The broken pieces of hairs were collected and weighed. The evaluation was carried out in relation to the used hair mass. For all results, a Grubbs test was performed to find any outliers.



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ATTACHMENT

2 Results

Tab. 2.1: Share of hair breakage [%] without product treatment vs. after treatment

Measure	Hair breakage [%]	
	Without treatment	With product application 220074542
1	8,7	1,7
2	9,0	3,8
3	1,5	1,9
4	0,9	1,2
5	3,1	6,2*
6	1,9	0,7
7	3,0	0,7
8	1,5	1,1
9	2,3	0,6
10	1,0	1,3
MW ± STD	3,3 ± 3,0	1,4 ± 1,0

*grupp outlier

Tab. 2.2: Share of hair breakage [%] without product treatment vs. after treatment

Measure	Hair breakage [%]	
	Without treatment	With product application 220074543
1	8,7	1,6*
2	9,0	0,3
3	1,5	0,2
4	0,9	0,5
5	3,1	0,5
6	1,9	0,4
7	3,0	0,3
8	1,5	1,1
9	2,3	0,1
10	1,0	0,1
MW ± STD	3,3 ± 3,0	0,4 ± 0,3

*grupp outlier



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ATTACHMENT

2 Results

Tab. 2.3: Share of hair breakage [%] without product treatment vs. after treatment

Measure	Hair breakage [%]	
	Without treatment	With product application 220074544
1	8,7	0,5
2	9,0	0,2
3	1,5	0,1
4	0,9	1,3
5	3,1	1,6
6	1,9	0,5
7	3,0	0,7
8	1,5	0,2
9	2,3	0,1
10	1,0	0,2
MW ± STD	3,3 ± 3,0	0,5 ± 0,5

Tab. 2.4: Share of hair breakage [%] without product treatment vs. after treatment

Measure	Hair breakage [%]	
	Without treatment	With product application 220074545
1	8,7	0,3
2	9,0	1,6
3	1,5	1,0
4	0,9	0,6
5	3,1	0,4
6	1,9	0,1
7	3,0	0,8
8	1,5	0,8
9	2,3	0,5
10	1,0	1,1
MW ± STD	3,3 ± 3,0	0,7 ± 0,4



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ATTACHMENT

2 Results

Tab. 2.5.: Share of hair breakage [%] without product treatment vs. after treatment

Measure	Hair breakage [%]	
	Without treatment	With product application 220074546
1	8,7	0,4
2	9,0	0,8
3	1,5	0,1
4	0,9	0,7
5	3,1	0,8
6	1,9	0,8
7	3,0	0,7
8	1,5	1,5
9	2,3	1,0
10	1,0	0,8
MW ± STD	3,3 ± 3,0	0,8 ± 0,4

Tab. 2.6: Share of hair breakage [%] without product treatment vs. after treatment

Measure	Hair breakage [%]	
	Without treatment	With product application 220074547
1	8,7	0,0
2	9,0	0,0
3	1,5	0,0
4	0,9	0,0
5	3,1	0,3
6	1,9	0,4
7	3,0	0,1
8	1,5	0,0
9	2,3	0,2
10	1,0	0,1
MW ± STD	3,3 ± 3,0	0,1 ± 0,2



Test Report 6118038-02 dated 10.08.2023
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Test Items: 220074542 - 220074548

ATTACHMENT

2 Results

Tab. 2.7: Share of hair breakage [%] without product treatment vs. after treatment

Measure	Hair breakage [%]	
	Without treatment	With product application 220074548
1	8,7	1,0
2	9,0	0,8
3	1,5	1,2
4	0,9	1,6
5	3,1	1,0
6	1,9	0,1
7	3,0	1,1
8	1,5	0,1
9	2,3	0,7
10	1,0	1,5
MW ± STD	3,3 ± 3,0	0,9 ± 0,5



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ATTACHMENT

3 Results in Percentage

220074542 compared to untreated [%]	2200745423 compared to untreated [%]	220074544 compared to untreated [%]	2200745425 compared to untreated [%]
56.1	88.1	83.6	77.7

220074546 compared to untreated [%]	2200745427 compared to untreated [%]	220074548 compared to untreated [%]
77.1	96.6	72.5

$$* \text{ improvement } [\%] = 100 - \frac{MW \text{ (hair breakage of the test item)}}{MW \text{ (hair breakage of untreated)}} \cdot 100$$



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ATTACHMENT

4 Statistical Analyses

Dunnett's Multiple Comparison Test

The Dunnett test compares every mean to a control mean (in this case **untreated** is the control) with a confidence level of 95%.

One-way analysis of variance

P value	< 0,0001
P value summary	****
Are means signif. different? (P < 0.05)	Yes
Number of groups	8
F	6,988
R square	0,4114

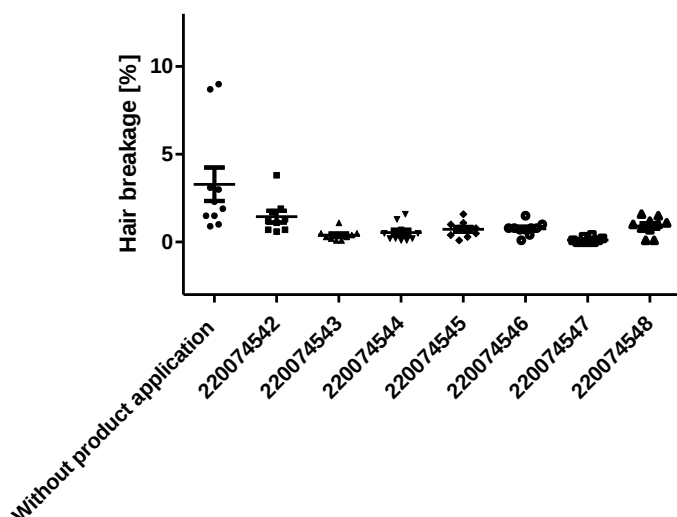
Bartlett's test for equal variances

Bartlett's statistic (corrected)	110,2
P value	< 0,0001
P value summary	****
Do the variances differ signif. (P < 0.05)	Yes

Dunnett's Multiple Comparison Test

Significant? P< 0,05?

Without product application vs 220074542	Yes	**
Without product application vs 220074543	Yes	***
Without product application vs 220074544	Yes	***
Without product application vs 220074545	Yes	***
Without product application vs 220074546	Yes	***
Without product application vs 220074547	Yes	***
Without product application vs 220074548	Yes	***



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ATTACHMENTS

5 Picture



end of report

The test results refer exclusively to the examined test items and the date of the test under the test specifications.

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