

# Effects of cosmetics on the skin microbiome of faces with different hydration levels

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		<input checked="" type="checkbox"/> Protocol
<b>Registration date</b> 09/08/2017	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan
		<input type="checkbox"/> Results
<b>Last Edited</b> 02/04/2019	<b>Condition category</b> Skin and Connective Tissue Diseases	<input type="checkbox"/> Individual participant data
		<input type="checkbox"/> Record updated in last year

## Plain English summary of protocol

### Background and study aims

Skin hydration is one of the most important factors affecting the properties and functions of the skin, and an adequate level of skin hydration is critical for maintaining healthy skin. The aim of this study is to find out whether using basic cosmetics on dry skin might restore skin hydration and change the bacteria present on the skin.

### Who can participate?

Healthy Korean female volunteers, aged 26–53

### What does the study involve?

Participants are divided into two groups according to the hydration levels of their cheek skin: either the high hydration group or the low hydration group. Participants also apply a set of basic cosmetics twice a day (morning and evening) onto their faces for 4 weeks after facial washing with a cleanser. The types of bacteria living on the skin, skin hydration, water loss, and roughness are compared between the two groups.

### What are the possible benefits and risks of participating?

Not provided at time of registration

### Where is the study run from?

Chung-Ang University (South Korea)

### When is the study starting and how long is it expected to run for?

June 2015 to July 2015

### Who is funding the study?

Coway Cosmetics R&D Center (South Korea)

### Who is the main contact?

Dr Hyo Jung Lee

## Contact information

**Type(s)**

Scientific

**Contact name**

Dr Hyo Jung Lee

**Contact details**

Department of Life Science  
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**Additional identifiers****Protocol serial number**

1-220777-A-N-02-DICN15101

**Study information****Scientific Title**

Effects of cosmetics on facial skin microbiome

**Study objectives**

The use of basic cosmetics on dry skin might restore skin biophysical parameters, including hydration level, as well as change microbial communities in dry skin to resemble those in normal skin.

**Ethics approval required**

Old ethics approval format

**Ethics approval(s)**

Dermapro Ltd. Institutional Review Board, 19/06/2015, ref: 1-220777-A-N-02-DICN15101

**Study design**

Non-randomised study

**Primary study design**

Interventional

**Study type(s)**

Quality of life

**Health condition(s) or problem(s) studied**

Facial skin microbiome

**Interventions**

Participants were divided into two groups, high hydration group (HHG; n = 16,  $\geq 50$  A.U., arbitrary units) and low hydration group (LHG; n = 14,  $< 50$  A.U.), according to the hydration levels in their

facial cheek skin. Bacterial communities of facial skin were compared between the two groups, together with measurements of skin biophysical parameters (skin hydration, transepidermal water loss [TEWL], and roughness).

In addition, the effects of basic cosmetics on skin biophysical parameters and the facial skin microbiome were investigated in the two groups. A set of basic cosmetics, consisting of skin softener (solubilized type), lotion (oil-in-water (O/W) emulsion type), essence (solubilized type), and cream (O/W emulsion type) containing moisturizing compounds was prepared and sequentially applied twice a day (morning and evening) for four weeks on their faces after facial washing with a cleanser.

### **Intervention Type**

Other

### **Primary outcome(s)**

Measurements of skin biophysical parameters and swab sampling of facial cheek skin performed just before the use of the cosmetics and at two and four weeks after use of the cosmetics:

1. Skin hydration values measured using a Corneometer CM825 instrument (Courage + Khazaka Electronic GmbH, Germany)
2. Skin transepidermal water loss (TEWL) measured with open-chamber Tewameter TM300 (Courage + Khazaka Electronic GmbH, Germany), according to the manufacturer's instructions
3. Facial skin roughness analyzed using the three-dimensional (3D) skin imaging system PRIMOS® premium (GF Messtechnik GmbH, Germany)
4. Bacterial communities analyzed using pyrosequencing using a 454 GS FLX Titanium Sequencing System (Roche, Germany) at Chunlab (Korea)

### **Key secondary outcome(s)**

No secondary outcome measures

### **Completion date**

31/07/2015

## **Eligibility**

### **Key inclusion criteria**

Healthy Korean female volunteers (age from 26–53 years)

### **Participant type(s)**

Healthy volunteer

### **Healthy volunteers allowed**

No

### **Age group**

Adult

### **Sex**

Female

### **Key exclusion criteria**

1. Pregnant or lactating
2. Performed a similar study within three months
3. Sensitive and hypersensitive skin
4. Moles, acne, telangiectasia, etc at the skin under study
5. Used similar cosmetics or took antibiotics within three months
6. Chronic diseases (asthma, diabetes mellitus, hypertension, etc)
7. Atopic dermatitis

**Date of first enrolment**

02/06/2015

**Date of final enrolment**

15/06/2015

## Locations

**Countries of recruitment**

Korea, South

**Study participating centre**

Chung-Ang University

Seoul

Korea, South

06974

## Sponsor information

**Organisation**

Coway

## Funder(s)

**Funder type**

Industry

**Funder Name**

Coway Cosmetics R&D Center

## Results and Publications

## Individual participant data (IPD) sharing plan

The datasets generated during and/or analysed during the current study are/will be available upon request from Dr Hyo Jung Lee.

## IPD sharing plan summary

Available on request

## Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Protocol file</a>		08/08/2017	02/04/2019	No	No