

# CONSENT FORM

## Background

Dermcidin is a recently discovered antimicrobial peptide secreted in sweat. It is found only in primates, including humans. Dermcidin acts as a part of our innate immune system and it has shown activity against multiple bacteria and fungi. It is secreted in sweat and it ends up on our skin, protecting us from harmful microbes. On top of showing activity against common pathogens it is also active against some bacteria that have formed resistance against antibiotics. These bacteria may cause hospital-acquired infections that are difficult to treat with antibiotics.

The goal of the project is to compare the antimicrobial activity of the sweat-derived dermcidin with a synthetically produced dermcidin. The human sweat contains a mix of different forms of dermcidin peptides while the synthetic one will be in the DCD-1L form of the peptide. These peptides will be added to the bacterial culture in same concentrations to see whether the antimicrobial activity differ.

The participants in this study are asked to provide sweat samples for the sweat-derived dermcidin. The sweat collection takes several hours. The samples will be gathered after the participants have spent time in a sauna. The study is part of the Aalto-Helsinki iGEM 2017 Team's International Genetically Engineered Machine competition project.

## Purpose

The purpose of this study is to compare the antimicrobial activity between sweat-derived dermcidin peptides with a synthetic form of the peptide (DCD-1L) in order to gain knowledge whether the sweat-derived mix is more effective than the single form of the peptide when introduced to the bacterial culture in same concentrations. If the antimicrobial activity is better for the synthetic peptide, DCD-1L, or there are no major differences between the sweat-derived and synthetic dermcidin, the DCD-1L form of the peptide could be used for medical purposes to fight harmful pathogens. For example, the peptide could be integrated on different surfaces so they can kill pathogens before they spread. This can be done by binding the peptide with cellulose and coat the surfaces with it. The cellulose could also be 3D-printed for specific purposes.

## Procedure

There are certain requirements for the participants in order for the results to be reliable.

We are asking you not to wear any cosmetics on your face, including moisturizer, sunscreen, medical creams and makeup. Before arriving to the sample collection you should abstain from alcohol for three days and caffeine for six hours.

The sample collection takes place at a private sauna. You are asked to collect the sweat sample from your facial skin by yourself but the sample collector personnel are there to assist if needed.

## The First Sample Collection Day:

- you are asked to spend time in the sauna until there is enough sweat produced and collected.
- You can choose whether you want to wear a swimsuit or a towel but nudity is also tolerated.
- You are asked to take a shower or at least wash your face before entering the sauna and then dry yourself thoroughly.
- You will collect your own sweat to a small sample container and give it to the sample collector personnel.

- You will be rewarded with edibles and beverages after sample collection.

### **What will happen to your samples?**

- Your sweat samples will be analyzed for their dermcidin concentration. *Having less or more dermcidin in your sweat samples than an average person's samples isn't enough to give you any information related to your health.*
- Your sweats antimicrobial activity will be analyzed by mixing it with bacteria. *Reduced antimicrobial activity doesn't provide enough information about your health thus diagnoses based on the results cannot be made.*
- The sample from sauna will be compared with each other and with a synthetically produced peptide.
- Samples will be labeled so that they are anonymous.

## **Potential risks**

### **Physical risks:**

- The physical risks involved in this study are minimal. Participants may feel dizzy, weak or dehydrated after sitting in the sauna or intensive exercise but the personnel are there to take care of proper care if you encounter any of these symptoms.
- There is a small risk of falling down from the sauna bench.
- Falling on or touching the sauna stove can cause burns.
- Floors can be wet and slippery which might cause falling.

### **Psychological risks:**

- You might feel uncomfortable with not wearing clothes.
- You might feel uncomfortable with people collecting your sweat.

- While most people find it relaxing, for some the heat of a sauna can make them feel uncomfortable and sometimes the experience can be scary.
- Gaining information about your dermcidin activity might change the way you feel about your health, even though the experiment does not give comparable results, thus they cannot be used to draw conclusions about your health.

### **Potential Benefits:**

The sample collection itself doesn't benefit the sample donor but the results might help us gain knowledge about the effectiveness of our synthetic peptide compared to the sweat-derived peptides.

This could help us develop our product to work more efficiently against pathogens.

### **Volunteering**

The sample donors will be rewarded with food and beverages but no monetary payment is involved in this study. The sample donors won't be compensated even if the research team will produce a vendible product in the future.

### **Rights to Withdraw**

The sample donors have the rights to withdraw from the study at any time. The samples will be destroyed and any data related to the donor will be deleted.

### **Confidentiality**

Photographs will be taken for our social media posts but the sweat donor has full rights to deny any photos taken of them. The sample results will be public in the iGEM team's wiki page but the results will be presented anonymously. If the results will be handed over to third parties, like publications, all information connecting the tested person to the results will be removed.

## Contact Information

With matters concerning the study and sample collection, you can contact us via email:

[team@aaltohelsinki.com](mailto:team@aaltohelsinki.com)

Study is carried out by Aalto-Helsinki iGEM Team 2017.

## Participating in the study means:

- You have read this form of consent and agree with the terms.
- The research study and your rights to withdraw at any point have been explained to you.
- You will be informed of any changes considering the sample taking that might affect your willingness to participate.
- All of your legal rights remain throughout the study.
- You are consenting to take part in this research study.

Signature and date: \_\_\_\_\_