

RESPECT OF SKIN MICROBIOME WITH A MICELLAR SOLUTION, AN ECOBIOLOGICAL APPROACH

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INTRODUCTION

Skincare products are used daily to maintain a healthy skin (cleansing, moisturizing, protecting...), but their impact on the skin microbiome, corresponding to the first layer of the skin, is still poorly understood. Preserving natural resources and mechanisms of the skin ecosystem is essential; an original approach based on this postulate, called ecobiology, has recently emerged in skincare. Ecobiology considers the skin as an ever-evolving ecosystem which hosts human and microbial cells that interact together with their environment.

In this context, we investigated the impact on the skin microbiome diversity and abundance of a micellar solution, a daily cleansing and leave-on skin care product.

MATERIALS AND METHODS

Subject recruitment:

- 20 healthy subjects
- 23 to 48 years old

Sample collection and sequencing:

- Cheek swabs
- Collection at day 0 and day 24/28
- Illumina Miseq (2x300)
- 16S V1-V3 region

Experiment protocol:

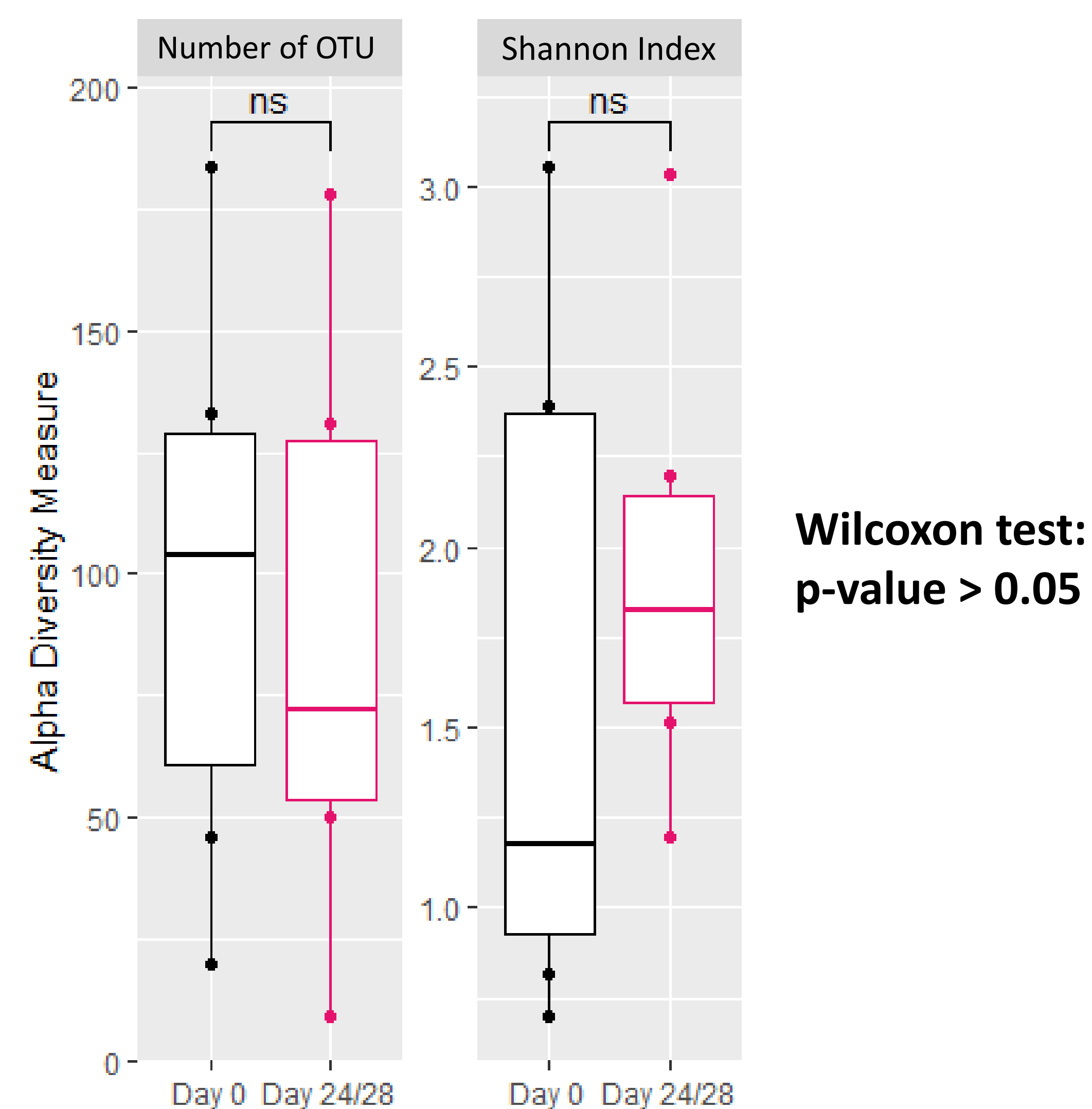
- Daily use (2x/day) micellar solution
- Randomized treated vs. untreated area

Diversity analysis:

- Number of OTU (Operational Taxonomic Unit)
- Shannon Index
- 12 main bacterial genera on the skin
- 10 main bacterial families on the skin

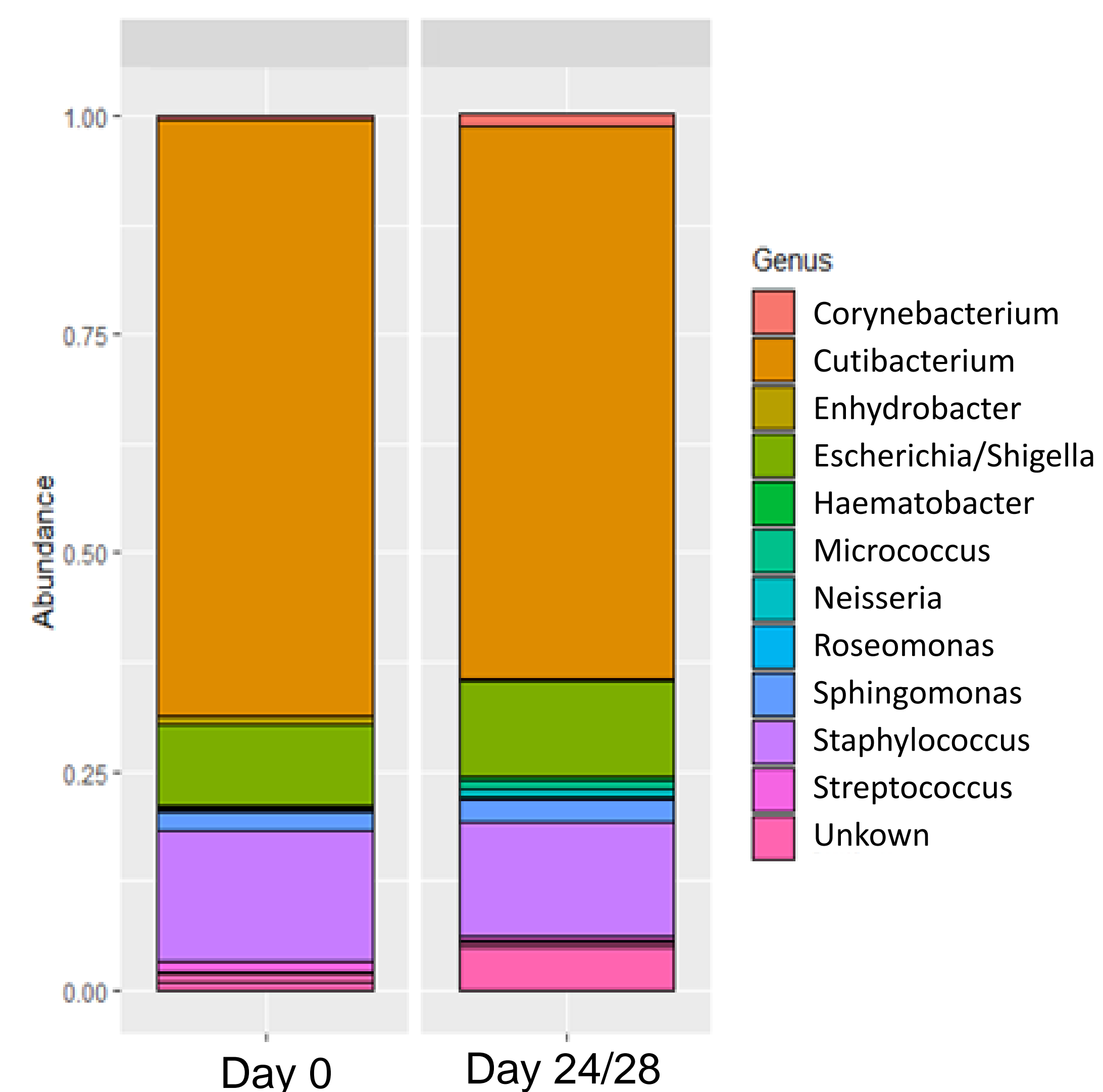
RESULTS

Figure 1: Effect of the micellar solution on the diversity of cheeks in normal conditions of use



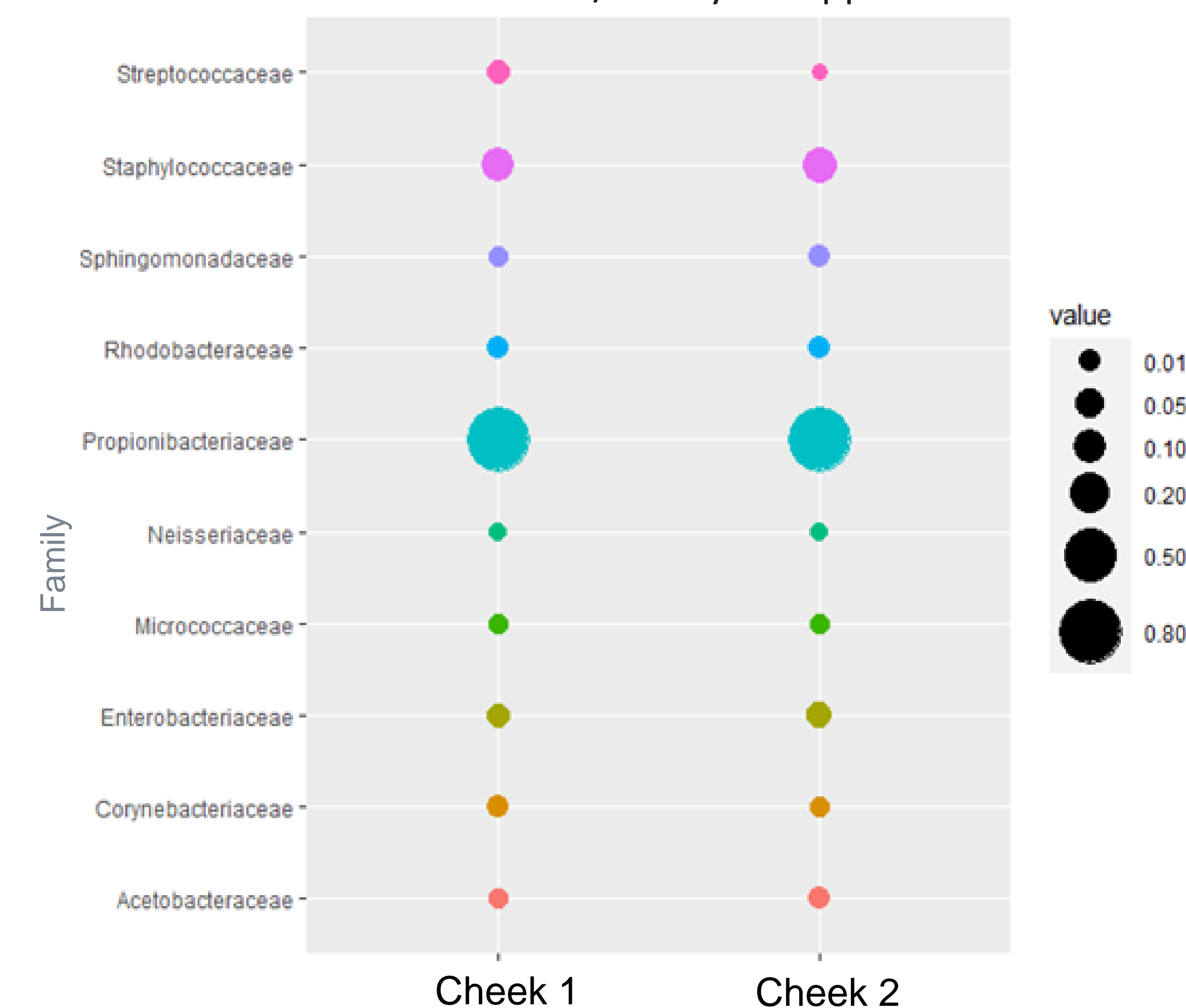
No significant variation of the skin microbiome diversity was induced

Figure 2: Effect of the micellar solution on the cheeks in normal conditions of use



No distribution alteration of the 12 most dominant cutaneous bacterial genera was observed

Figure 3: Comparison of the manual preference on the skin bacterial distribution after 24/28 days of application.



No distribution alteration of the 10 most dominant cutaneous bacterial genera was observed

DISCUSSION

The micellar solution respects the microbial biodiversity (Shannon, richness and distribution) which is essential to maintain the natural protection of the skin against pathogens, the skin barrier function and to prevent or offset skin disorders. **A micellar solution formulated according to the ecobiological approach, with selected cosmetic ingredients, is respectful of the skin microbiome's balance over several days of application.**