The influence of the product on the key organisms of the respective body region was examined.

**Information about the tested product:**

**Manufacturer:**
Cargill Beauty
291 E. El Prado Ct.,
85225 Chandler, AZ
USA

**Name of the product:**
L22®

| | |
|---|---|
| **Product type:** | Ingredient |
| **Application:** | Leave-on |
| **Dilution:** | No |
| **Sample received:** | 05 August 2024 |
| **Test Start:** | 06 August 2024 |
| **Test End:** | 05 September 2024 |
| **Test Standard:** | **MyMicrobiome Standard 18.11 Face / Body** |
| **Test result:** | **1.5** |
| **Certification:** | granted |

**Test description**

The MyMicrobiome Standard evaluates the influence of cosmetics, personal care products and pharmaceuticals on microbial key players located at specific skin or mucous membrane sites.

An intact skin microbiome has a fundamental influence on skin health. Skin-friendly products must also be microbiome-friendly and ensure the maintenance of the balance among the skin microorganisms of the user.

Every person's microbiome is unique. Each body area, however, harbors a characteristic composition of bacteria, viruses and fungi. The test examines the product's influence on the key organisms typical for each skin area and thus offers a standardized procedure.

**Various aspects are examined:**

**The microbial quality of the product.**

To be evaluated according to our standard, the product needs to be free of contaminants. This is verified in the microbial quality test.

**The influence of the product on the natural, healthy skin balance.**

The skin-commensal bacterium *Staphylococcus epidermidi*s produces antimicrobial peptides (so-called bacteriocins) and regulates skin pH, which keeps harmful microorganisms such as *Staphylococcus aureus* in check. The product should not disturb the balance between friendly and harmful bacteria. This sensitive balance is investigated in conjunction with the product.

**The influence of the product on the bacterial diversity of the specific body region.**

Each body region is colonized by a certain set of microorganisms. For healthy microbiome, it is particularly important to maintain this biodiversity. The influence of the product on the respective microbial composition is examined in the test. The aim is to find as many key organisms as possible after contact with the product.

**The influence of the product on the growth behavior of the microbes of the specific body region.**

In addition to the diversity of the microorganisms in a specific body area, the growth of the individual key organisms should not be influenced by the product. The key organisms are brought into direct and indirect contact with the product and their growth is observed.

**Results**

**The microbiological quality of the product.**

The prerequisite for the test for microbial friendliness is the microbiological quality of the product based on DIN ISO 17516. The following table contains the limit values for contaminants that must be observed.

| Types of organisms | Limit values |
|---|---|
| **Total aerobic microbial count (TAMC) and total combined yeasts/ moulds count (TYMC)** | ≤ 20 cfu*/g or ml |

* colony forming units (cfu)

**Results microbiological quality**

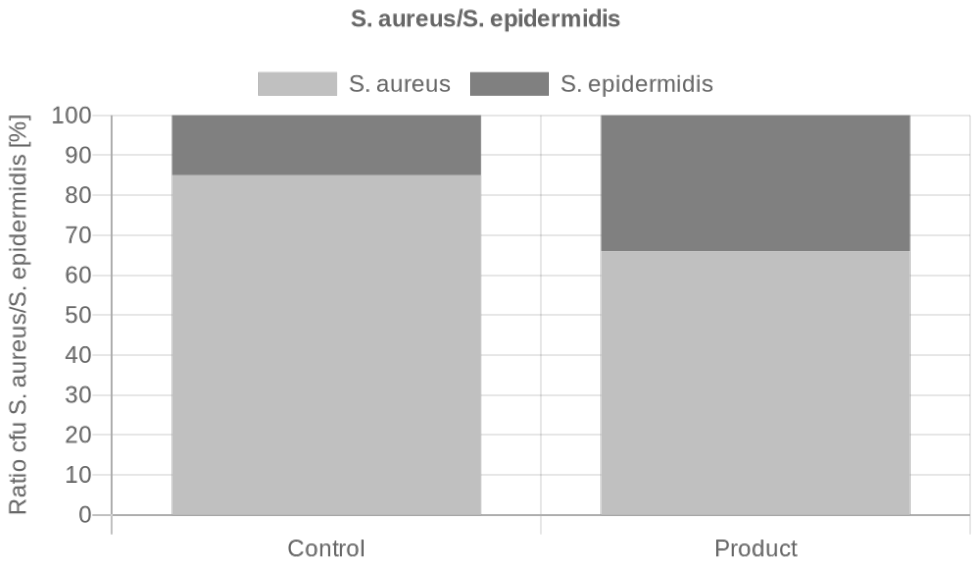
| Parameter | Sample no.: 24.924.18.1 |
|---|---|
| **TAMC and TYMC [cfu/0,1 ml]** | < 20 |

The microbiological quality of the product is fulfilled.

**Results**

**The influence of the product on the natural, healthy skin balance.**

A co-culture of *S. epidermidis* and *S. aureus* is incubated with the product for 15 min (rinse-off) or 4h (leave-on). Bacterial counts are determined, the ratio of the two microbes to each other is assessed and compared to the control sample (PBS).

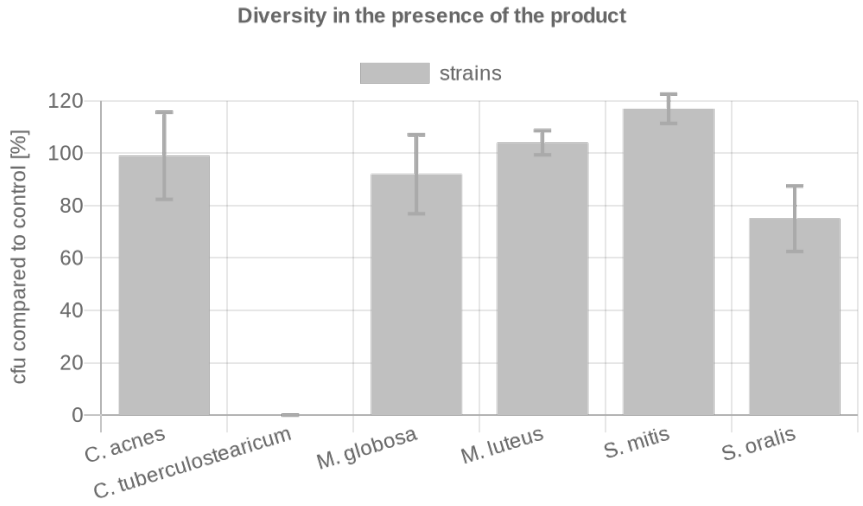



| | cfu/ml | | Ratio Product/ Control | Grade |
|---|---|---|---|---|
| | *S. aureus* | *S. epidermidis* | | |
| **Control** | 6700 | 1140 | 3 | **1.0** |
| **Product** | 3333.3 | 1693.3 | | |

**Results – SEBACEOUS SKIN –**

**The influence of the product on the microbial diversity of the specific body region.**

A co-culture of key organisms of the specific body region is incubated with the product for 15 min (rinse-off) or 4h (leave-on). Bacterial colonies are counted, and the ratio of the cfu in the presence of the product compared to the control (PBS) is determined.

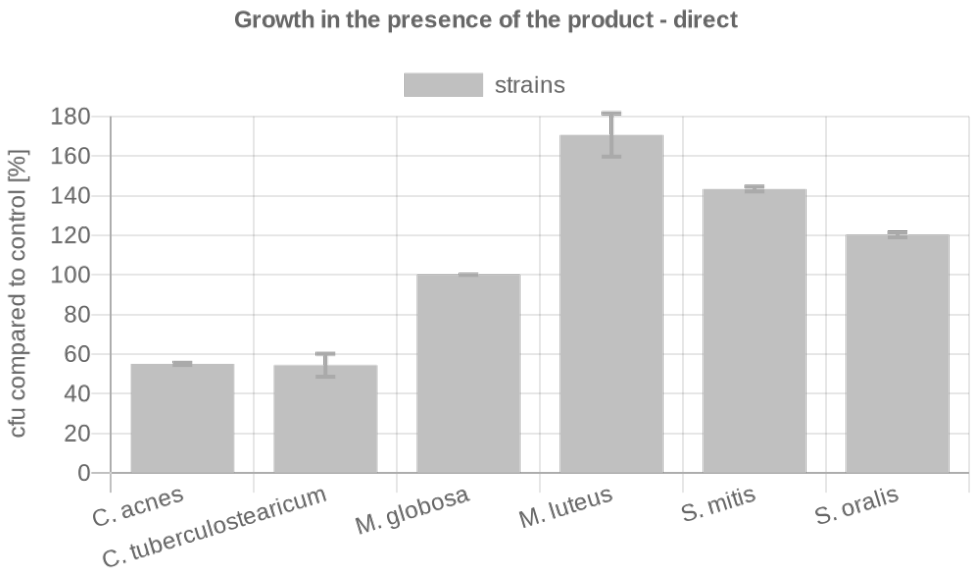



| Key-Microbe | t= | 4h | Rating |
|---|---|---|---|
| | cfu/ml | | |
| ***C. acnes*** | Control | 570 | 1 |
| | Product | 730 | |
| ***C. simulans*** | Control | 706.7 | 1 |
| | Product | 753.3 | |
| ***M. globosa confluence*** | Control | 55966.7 | 1 |
| | Product | 54400 | |
| ***S. capitis*** | Control | 3333.3 | 2 |
| | Product | 2333.3 | |
| ***S. epidermidis*** | Control | 3700 | 1 |
| | Product | 3700 | |
| ***S. hominis*** | Control | 6200 | 1 |
| | Product | 7800 | |
| ***S. mitis*** | Control | 400 | 2 |
| | Product | 273.3 | |
| **Overall rating:** | | | **1.3** |

**Results – SEBACEOUS SKIN –**

**The influence of the product on the growth behavior of the microbes of a specific body region – directly.**

The influence of the product on the growth of each individual key organism of the specific body region is investigated and the ratio of the cfu in the presence of the product is calculated in % relative to the control sample (PBS). Product contact with microorganisms is direct.




| Key-Microbe | cfu/ml | | Rating |
|---|---|---|---|
| ***C. acnes*** | Control | 477 | 3 |
| | Product | 262.7 | |
| ***C. simulans*** | Control | 451.3 | 2 |
| | Product | 360 | |
| ***M. globosa confluence*** | Control | 100 | 1 |
| | Product | 100 | |
| ***S. capitis*** | Control | 166.3 | 1 |
| | Product | 174.7 | |
| ***S. epidermidis*** | Control | 176 | 1 |
| | Product | 192.5 | |
| ***S. hominis*** | Control | 348.7 | 2 |
| | Product | 236 | |
| ***S. mitis*** | Control | 168 | 2 |
| | Product | 240.7 | |
| **Overall rating:** | | | **1.7** |

**Results – SEBACEOUS SKIN –**

**The influence of the product on the growth behavior of the microbes of the specific body region – indirectly.**

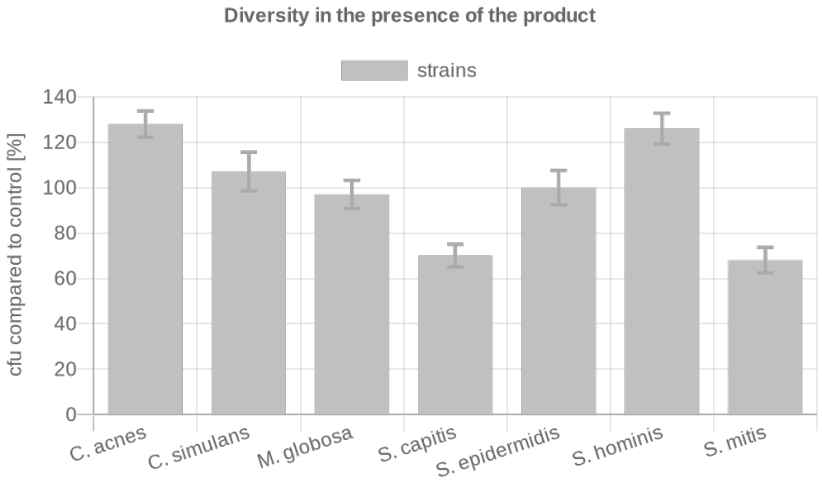
The influence of the product on the growth of each individual key organism of the specific body region is investigated and the ratio of the cfu in the presence of the product is calculated in % relative to the control sample (PBS). Product contact with microorganisms is indirect.


| Key-Microbe | cfu/ml | | Rating |
|---|---|---|---|
| ***C. acnes*** | Control | 201.7 | 1 |
| | Product | 216 | |
| ***C. simulans*** | Control | 324.3 | 1 |
| | Product | 339.5 | |
| ***M. globosa confluence*** | Control | 100 | 1 |
| | Product | 100 | |
| ***S. capitis*** | Control | 224.3 | 2 |
| | Product | 206.7 | |
| ***S. epidermidis*** | Control | 184.3 | 2 |
| | Product | 151 | |
| ***S. hominis*** | Control | 295 | 1 |
| | Product | 311.3 | |
| ***S. mitis*** | Control | 147.3 | 2 |
| | Product | 199.3 | |
| **Overall rating:** | | | **1.4** |

**Results – DRY SKIN –**

**The influence of the product on the microbial diversity of the specific body region.**

A co-culture of key organisms of the specific body region is incubated with the product for t = 15 min (rinse-off) or 4h (leave-on). The ratio of the microbes compared to the control (PBS) is determined.

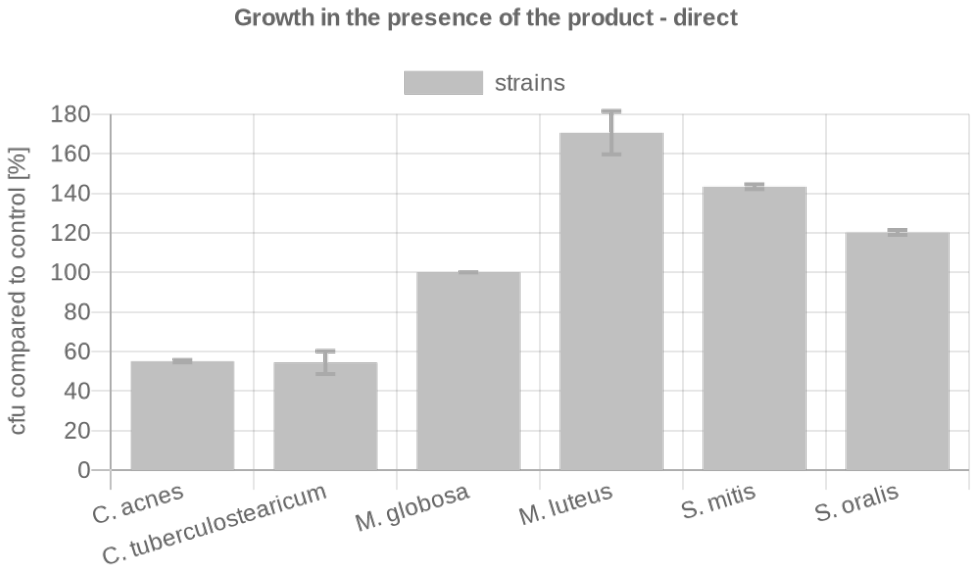



| Key-Microbe | t= | 4h | Rating |
|---|---|---|---|
| | cfu/ml | | |
| ***C. acnes*** | Control | 345 | 1 |
| | Product | 340 | |
| ***C. tuberculostearicum*** | Control | n/a | n/a |
| | Product | n/a | |
| ***M. globosa confluence*** | Control | 65200 | 2 |
| | Product | 59800 | |
| ***M. luteus*** | Control | 1746,7 | 1 |
| | Product | 1813,3 | |
| ***S. mitis*** | Control | 1533,3 | 1 |
| | Product | 1800 | |
| ***S. oralis*** | Control | 4466,7 | 2 |
| | Product | 3333,3 | |
| **Overall rating:** | | | **1.4** |

**Results – DRY SKIN –**

**The influence of the product on the growth behavior of the microbes of a specific body region – directly.**

The influence of the product on the growth of each individual key organism of the specific body region is investigated and the ratio of the cfu in the presence of the product is calculated in % relative to the control sample (PBS). Product contact with microorganisms is direct.




| Key-Microbe | cfu/ml | | Rating |
|---|---|---|---|
| ***C. acnes*** | Control | 477 | 3 |
| | Product | 262.7 | |
| ***C. tuberculostearicum*** | Control | 409.3 | 3 |
| | Product | 222.7 | |
| ***M. globosa confluence*** | Control | 100 | 1 |
| | Product | 100 | |
| ***M. luteus*** | Control | 165.7 | 3 |
| | Product | 282.7 | |
| ***S. mitis*** | Control | 168 | 2 |
| | Product | 240.7 | |
| ***S. oralis*** | Control | 1645.7 | 1 |
| | Product | 1977.7 | |
| **Overall rating:** | | | **2.2** |

**Results – DRY SKIN –**

**The influence of the product on the growth behavior of the microbes of the specific body region – indirectly.**

The influence of the product on the growth of each individual key organism of the specific body region is investigated and the ratio of the cfu in the presence of the product is calculated in % relative to the control sample (PBS). Product contact with microorganisms is indirect.


| Key-Microbe | cfu/ml | | Rating |
|---|---|---|---|
| ***C. acnes*** | Control | 201.7 | 1 |
| | Product | 222.7 | |
| ***C. tuberculostearicum*** | Control | 342.7 | 2 |
| | Product | 226 | |
| ***M. globosa confluence*** | Control | 100 | 1 |
| | Product | 100 | |
| ***M. luteus*** | Control | 162 | 1 |
| | Product | 173.3 | |
| ***S. mitis*** | Control | 147.3 | 2 |
| | Product | 199.3 | |
| ***S. oralis*** | Control | 1223.3 | 1 |
| | Product | 1468 | |
| **Overall rating:** | | | **1.3** |

**Results**

The results are evaluated with grades from 1 (one) to 3 (three).

The product has passed if it obtains an overall grade between 1.0 and 2.0.

1.0 – 2.0 = Microbiome-friendly | 2.1 – 3.0 = Microbiome-influencing

| Test | Grade |
|---|---|
| Balance of the skin microbiome | 1.0 |
| Diversity of the corresponding skin microbiome (sebaceous, x2) | 1.3 |
| Diversity of the corresponding skin microbiome (dry, x2) | 1.4 |
| Skin-product contact direct (sebaceous, x2) | 1.7 |
| Skin-product contact direct (dry, x2) | 2.2 |
| Skin-product contact indirect (sebaceous) | 1.4 |
| Skin-product contact indirect (dry) | 1.3 |
| **Overall grade** | **1.5** |

**With an overall grade of 1.5 the seal „Microbiome-friendly“ is awarded according to MyMicrobiome Standard 18.11 Face / Body.**

Place, Date: Balzers, 29 October 2024

Responsible person: Dr. Kristin Neumann

Signature: