

Mini Review

Do OTC Microbiome Enhancing Products Offer Preventative Care for Skin Health?

Yadav E*

Skincare Anarchy LLC, USA

***Corresponding author:** Ekta Yadav, Skincare Anarchy LLC, USA**Received:** August 15, 2022; **Accepted:** September 12, 2022; **Published:** September 19, 2022

Mini Review

There has been recent surge of pro and prebiotic based skincare products being available OTC. For example, there have been a lot of “yogurt masks” or even skin specific probiotic supplements that have flooded retail stores with the promise of improving what they claim to be their understanding of “the skin microbiome”. At first glance, there is psychological appeal towards believing in their use due to the increasing awareness around pathologies related to the skin (e.g. acne, rosacea, and hypersensitivity reactions). However, with all the research out there now about the gut microbiome, skin microbiome, and any part of the human microbiome basically, we figured these claims warranted a deeper dive.

As a summarizing introduction to the relevance of our microbiome: “The skin is comprised of three major habitats: moist, sebaceous, and dry. Sebaceous skin includes the face, chest, and back, and is a comparatively simple community, composed mainly of several species of *Cutibacterium* (formerly *Propionibacterium*), *Staphylococcus* bacteria, and *Malassezia* yeasts” [1].

Sebum excretion appears to be the primary driving force in sebaceous microbiome development and maintenance, as sebaceous microbiomes shift dramatically in density and numbers in different growth periods. Additionally, “The importance of microbiome diversity has recently been highlighted in research examining the associations between skin and gut microbiota and dermatologic conditions such as atopic dermatitis, acne, rosacea, and psoriasis” [2].

In general, it appears that increased diversity of the entire microbiome plays a beneficial role in promoting GUT health. However, with Skin, it is more complex. While skin microbiome diversity is important, the role of sebum can be influential to controlling diversity [1].

However, because increases in diversity can correlate with increased skin dryness (i.e. the more bacteria there are in a certain area could cause dryness rather than a nutrition rich environment therapeutically), this may not be healthy if it implicates an impaired skin barrier [3].

Although there is considerable data that has provided immense insights into the colony compositions of the microbiota that we typically find on skin surfaces, the applications associated with helping those colonies prevail, regenerate, and enhance their therapeutic contributions is still up for debate when implemented via supplementations.

Many researchers would agree that they think there is a great theory behind wanting to promote natural colonization of our skin with naturally occurring microorganisms. However, the science of understanding HOW our microbiome plays a role in our normal physiological processes is a very budding field in medical research. Taking a half studied concept and formulating an entire skincare category is a bit presumptive and premature.

References

1. Linehan JL, Harrison OJ, Han SJ, Byrd AL, Vujkovic-Cvijin I, et al. Non-classical Immunity Controls Microbiota Impact on Skin Immunity and Tissue Repair. *Cell*. 2018; 172: 784–796.
2. Samantha R Ellis, Mimi Nguyen, Alexandra R Vaughn, Manisha Notay, Waqas A Burney, et al. Sivamani The Skin and Gut Microbiome and Its Role In Common Dermatologic Conditions. *Microorganisms*. 2019; 7: 550.
3. Oh J, Byrd AL, Deming C, Conlan S, Program NCS, et al. Biogeography and individuality shape function in the human skin metagenome. *Nature*. 2014; 514: 59–64.