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Moisturizers for Atopic Dermatitis That Support Skin Microbiome and Barrier Function

INTRODUCTION

A total of 31.6 million Americans, or approximately 10% of the US population, have eczema, an inflammatory skin condition.^{1,2} There are 7 different types of eczema, of which atopic dermatitis (AD) is the most common. Although the symptoms of AD and those associated with disease flares are unique to each individual, itch (pruritis) is a frequent burden. Patients with AD also experience rashes, pain, and difficulty sleeping.¹ AD is a complex chronic skin disease, with several factors implicated in its pathogenesis.³⁻⁵ Skin barrier dysfunction, an overactive immune response, and genetic and environmental contributions may play a role in the development of AD.³

ROLE OF THE SKIN MICROBIOME IN AD

Healthy skin relies on a diverse skin microbiome to maintain normal function.⁴ Changes in the microbiome are linked to the development and severity of AD.^{4,5}

Microbiome dysbiosis is a key contributor in the pathogenesis of AD. Healthy skin is colonized by a variety of microorganisms; the most common bacterial species include *Cutibacterium*, *Staphylococcus*, and *Corynebacterium*.⁴ In AD, skin has an impaired ability to detect and defend against microbial pathogens, and it experiences higher colonization of *S aureus* and lower bacterial diversity overall.^{4,5} Deficiencies in microbial defense observed in AD may be driven by impairments in stratum corneum barrier functions, including a reduction in antimicrobial peptides.⁵

Microbial colonization is also affected by the amount of water available on certain areas of the skin. A dry skin environment supports the growth of *S aureus* and inhibits colonization of favorable symbiotic bacteria. Preservation of a moist skin barrier is an important aspect of supporting a healthy skin microbiome and reducing symptoms of AD.⁶

MOISTURIZERS AND AD MANAGEMENT GUIDELINES

According to 2023 guidelines from the American Academy of Dermatology (AAD), topical skin care therapies, including moisturizers, are the primary treatment strategy for adult patients with AD. The AAD gives a strong recommendation with moderate certainty of evidence for the use of moisturizers in adults with AD. Although moisturizers can be used as monotherapy in cases of mild AD, they are often used with pharmacologic agents that include topical corticosteroids or calcineurin inhibitors.⁷

Although moisturizers can restore the skin barrier, reduce transepidermal water loss (TEWL), and improve skin hydration, they do not provide lasting effects or completely address

the underlying pathophysiology of AD. To improve the symptoms and severity of AD, microbiome dysbiosis must be targeted. Water is essential for the proper balance of skin microorganisms, and the amount of water in certain areas on the body influences the type of bacteria present. In this framework, water acts as a prebiotic to enhance diversity of the skin microbiome. La Roche-Posay Thermal Spring Water (LRP-TSW) used in La Roche-Posay's Lipikar product formulations has pre- and post-biotic properties that are different than are those of regular water to enhance the diversity of the skin microbiome.⁶

The use of moisturizers and washes that have prebiotic and probiotic properties—such as La Roche-Posay's Lipikar Wash AP+ Moisturizing Body & Face Wash, Lipikar AP+M Triple Repair Body Moisturizer for Dry Skin, and Lipikar Soothing Eczema Cream With 1% Colloidal Oatmeal—may improve skin barrier function as they improve the diversity of the skin microbiota.^{6,8-10} These 3 La Roche-Posay products are recognized by the National Eczema Association Seal of Acceptance for patients with AD.⁸⁻¹⁰

LA ROCHE-POSAY PRODUCT INGREDIENTS FOR MICROBIOME AND SKIN BARRIER FUNCTION IN AD

When recommending moisturizers or washes to patients with AD, pharmacists can familiarize themselves with the products' ingredients to ensure that the patient's skin barrier function and the skin microbiome are supported. Lipikar Wash AP+ Moisturizing Body & Face Wash, Lipikar AP+M Triple Repair Body Moisturizer for Dry Skin, and Lipikar Soothing Eczema Cream With 1% Colloidal Oatmeal contain some or all of the 3 ingredients described below that fortify the skin microbiome and improve barrier function.⁸⁻¹⁰

LRP-TSW

LRP-TSW is a thermal water specifically sourced from the town of La Roche-Posay in France.⁸⁻¹⁰ The La Roche-Posay Thermal Center is open to patients, and staff treats 7500 people annually for AD and other conditions, such as burns and cutaneous adverse effects from cancer treatment.^{11,12} The water contains specific minerals, such as selenium and strontium, that support cellular function and microbiome health. The mineral properties of LRP-TSW help to improve itching and dryness of the skin.^{13,14} Nutrients found in LRP-TSW are considered to be prebiotics, because they support a healthy balance of commensal bacteria on the skin. LRP-TSW also has probiotic properties. It contains a variety of nonpathogenic microbes, most of which are gram-negative, involving a low concentration of bacteria overall.¹⁴

TABLE. La Roche-Posay Lipikar Products Supporting Skin Microbiome and Barrier Function⁸⁻¹⁰

	Lipikar Wash AP+ Moisturizing Body & Face Wash	Lipikar AP+M Triple Repair Body Moisturizer for Dry Skin	Lipikar Soothing Eczema Cream With 1% Colloidal Oatmeal
Key ingredients	La Roche-Posay Prebiotic Thermal Water, Aqua Posae Filiformis, Shea Butter, Glycerin, and Niacinamide	La Roche-Posay Prebiotic Thermal Water, Postbiotic Aqua Posae Filiformis, Shea Butter, Glycerin, Niacinamide, and Ceramide-3	La Roche-Posay Prebiotic Thermal Water, Shea Butter, Glycerin, Niacinamide, and 1% Colloidal Oatmeal
Features	<ul style="list-style-type: none"> Moisturizing body and face wash provides long-lasting, 24-hour hydration Gently cleans skin and helps alleviate dryness Leaves the skin feeling soft and supple Helps protect skin from the drying effects of water Skin feels instantly soothed and moisturized Suitable for patients undergoing chemotherapy 	<ul style="list-style-type: none"> Triple repair body moisturizer for dry to very dry skin that helps restore the skin's protective barrier Provides long-lasting, 48-hour hydration Replenishes skin's essential lipids Daily relief for dry to very dry skin Gentle body moisturizer clinically shown to help reduce dry, rough skin Rich, comforting cream texture with a nongreasy and nonsticky finish Suitable for patients undergoing chemotherapy and radiation Prebiotic body cream rebalances the skin microbiome 	<ul style="list-style-type: none"> Visibly reduces signs of eczema and provides long-lasting relief Helps relieve itching and irritation Replenishes skin's essential lipids and provides 48-hour hydration Soothing, nongreasy cream texture Steroid-free and antibiotic-free eczema cream
NEA Seal of Acceptance	✓	✓	✓

NEA, National Eczema Association.

Aqua Posae Filiformis (APF)

APF is a patented biomass of the nonpathogenic gram-negative bacteria *Vitreoscilla filiformis* that is grown in LRP-TSW.^{6,8,10} It has demonstrated efficacy in reducing inflammation, supporting immunoregulation, and, along with LRP-TSW, helping to balance the skin microbiome and to rebuild the skin's barrier function.^{6,15}

Lipid Replenishing Complex

Quality moisturizers comprising occlusives and humectants may enhance barrier function, decrease TEWL, and increase skin hydration. However, they do not fully address dysregulation of the cutaneous barrier in AD, and their effects are temporary. These issues can be amended, and the overall efficacy can be improved by using barrier repair creams with physiologic lipids.⁶

The lipid replenishing complex in the 3 Lipikar products includes niacinamide, shea butter, and glycerin. Niacinamide, a water-soluble vitamin, is a form of vitamin B₃. It is commonly used in dermatologic products due to its calming properties and ability to replenish the skin's moisture barrier. Shea butter is a soothing emollient that helps to repair the skin's hydrolipidic film. Glycerin is a humectant that hydrates the skin by soaking up water from nearby surroundings.⁸⁻¹⁰

In addition to these 3 ingredients, the Lipikar AP+M Triple Repair Body Moisturizer for Dry Skin now has an enhanced formula with ingredients that restore the skin microbiome and reduce the population of *Staphylococcus* on the skin.^{16,17}

Microresyl is a patented ingredient from *Ophiopogon japonicus* root extract, a substance used in traditional Chinese medicine, and is known for its anti-inflammatory and antimicrobial actions.^{18,19} Microresyl inhibits the adhesion of biofilm created by *S aureus*, thereby reducing its growth on the skin.^{17,18}

Additionally, the Lipikar AP+M Triple Repair Body Moisturizer for Dry Skin includes ceramide-3, also known as ceramide NP. It is a skin-identical lipid that helps to maintain a healthy skin barrier by locking in moisture and replenishing the skin's protective barrier.⁸

The **TABLE** summarizes information about the 3 La Roche-Posay products discussed in this article and their benefits. Of note, the Lipikar Wash AP+ Moisturizing Body & Face Wash provides 24 hours of hydration, and the Lipikar AP+M Triple Repair Body Moisturizer for Dry Skin and the Lipikar Soothing Eczema Cream With 1% Colloidal Oatmeal supply moisture for 48 hours.⁸⁻¹⁰

PRACTICAL CONSIDERATIONS FOR THE PHARMACIST

Pharmacists can educate patients looking for moisturizers to support treatment of AD about the importance of products that can restore the skin microbiome and barrier function.⁸⁻¹⁰ Pharmacists can find additional skin health resources at the Pharmacy Corner (lorealdermatologicalbeauty.us/pharmacy). With registration, pharmacists can enjoy the free benefits of being a member, such as receiving product kit announcements and updates on educational resources and events. ■

References are available on PharmacyTimes.com.

[ONLINE ONLY]

REFERENCES

1. What is eczema? National Eczema Association. Accessed March 17, 2023. <https://nationaleczema.org/eczema/>
2. Eczema stats. National Eczema Association. Accessed March 17, 2023. <https://nationaleczema.org/research/eczema-facts/>
3. Fishbein AB, Silverberg JI, Wilson EJ, Ong PY. Update on atopic dermatitis: diagnosis, severity assessment, and treatment selection. *J Allergy Clin Immunol Pract*. 2020;8(1):91-101. doi:10.1016/j.jaip.2019.06.044
4. Bjerre RD, Holm JB, Palleja A, Sølberg J, Skov L, Duus Johansen J. Skin dysbiosis in the microbiome in atopic dermatitis is site-specific and involves bacteria, fungus and virus. *BMC Microbiol*. 2021;21(1):256. doi:10.1186/s12866-021-02302-2
5. Del Rosso JQ, Cash K. Topical corticosteroid application and the structural and functional integrity of the epidermal barrier. *J Clin Aesthet Dermatol*. 2013;6(11):20-27.
6. Baldwin H, Aguh C, Andriessen A, et al. Atopic dermatitis and the role of the skin microbiome in choosing prevention, treatment, and maintenance options. *J Drugs Dermatol*. 2020;19(10):935-940. doi:10.36849/JDD.2020.10.36849/JDD.2020.5393
7. Sidbury R, Alikhan A, Bercovitch L, et al. Guidelines of care for the management of atopic dermatitis in adults with topical therapies. *J Am Acad Dermatol*. 2023;S0190-9622(23)00004-X. doi:10.1016/j.jaad.2022.12.029
8. Lipikar AP+M Triple Repair Body Moisturizer for Dry Skin. La Roche-Posay. Accessed February 8, 2023. <https://www.laroche-posay.us/our-products/dry-skin-eczema/body-lotion/lipikar-ap-m-triple-repair-body-moisturizer-for-dry-skin-lipikarbalmap.html>
9. Lipikar Eczema Cream. La Roche-Posay. Accessed February 8, 2023. <https://www.laroche-posay.us/our-products/dry-skin-eczema/eczema-cream/lipikar-eczema-cream-3337875588621.html>
10. Lipikar Wash AP+ Moisturizing Body & Face Wash. La Roche-Posay. Accessed February 8, 2023. <https://www.laroche-posay.us/our-products/dry-skin-and-eczema/body-wash/lipikar-wash-ap-moisturizing-body-wash-and-face-wash-3337875751032.html>
11. La Roche-Posay enhances best-selling body cream with triple repair efficacy. News release PR Newswire. April 11, 2022. Accessed April 13, 2023. <https://www.prnewswire.com/news-releases/la-roche-posay-enhances-best-selling-body-cream-with-triple-repair-efficacy-301522374.html>
12. Skin burns and how to heal them faster. La Roche-Posay. Accessed April 13, 2023. <https://www.laroche-posay.sg/article/skin-burns-and-how-to-make-them-recover-faster>
13. Seite S. Thermal waters as cosmeceuticals: La Roche-Posay thermal spring water example. *Clin Cosmet Investig Dermatol*. 2013;6:23-28. doi:10.2147/CCID.S39082
14. Zeichner J, Seite S. From probiotic to prebiotic using thermal spring water. *J Drugs Dermatol*. 2018;17(6):657-662.
15. Friedman A. Emollient-based therapy for AD: a potential role for rebalancing the microbiome. *Practical Dermatology*. October 2019. Accessed February 8, 2023. <https://practicaldermatology.com/articles/2019-oct-supplement/emollient-based-therapy-for-ad-a-potential-role-for-rebalancing-the-microbiome>
16. New products. *Practical Dermatology*. July 2022. Accessed February 13, 2023. <https://practicaldermatology.com/articles/2022-july/new-products-4>
17. Massive DNA sequencing studies have expanded our insights of the ecological and functional characteristics of the microbiome. Scandinavian MIND. February 15, 2021. Accessed March 1, 2023. <https://scandinavianmind.com/opinion/massive-dna-sequencing-studies-have-expanded-our-insights-of-the-ecological-and-functional-characteristics-of-the-microbiome>
18. What's new from La Roche-Posay? Next Steps in Derm. Accessed March 1, 2023. <https://nextstepsinderm.com/webinar/whats-new-from-la-roche-posay/>
19. Chen MH, Chen XJ, Wang M, Lin LG, Wang YT. Ophiopogon japonicus—a phytochemical, ethnomedicinal and pharmacological review. *J Ethnopharmacol*. 2016;181:193-213. doi:10.1016/j.jep.2016.01.037