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Clinical Evidence for a BALIMONT Multi-Strain Oral Probiotic Composition in Enhancing Skin Radiance

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Abstract

We evaluated a BALIMONT multi-strain oral probiotic composition for improvement of visible skin radiance and interpreted the 28-day cohort findings against published human clinical trials of oral probiotics and synbiotics relevant to skin appearance. In our 28-day comparative evaluation, healthy adults aged 20-45 years with dull or lackluster skin received one of three multi-strain formulations or a single-strain L. reuteri comparator, with 30 participants in each cohort. At day 28, mean radiance improvement reached 14.2%, 10.8%, and 11.5% in the three multi-strain cohorts, versus 2.7% in the single-strain comparator, while Shannon diversity increased by 22.6%, 18.3%, and 19.1% versus 5.2%, respectively. Public human studies show that oral probiotics can improve hydration, gloss, elasticity, barrier recovery, and selected inflammatory or appearance-related endpoints in healthy skin, sensitive skin, acne, and atopic dermatitis. Taken together, our 28-day findings are directionally concordant with the broader literature and support larger, prospectively registered confirmatory trials of multi-strain oral probiotic strategies for skin-radiance support.

Keywords

BALIMONT; Probiotic; Skin Radiance; Gut-skin Axis; Lactobacillus Reuteri; Lactobacillus Rhamnosus; Lactobacillus Plantarum; Clinical Evidence.

1. Introduction

Skin radiance is a composite phenotype shaped by epidermal hydration, barrier integrity, surface regularity, optical reflectance, and low-grade inflammatory tone. The consumer-facing language of “glow” usually maps onto measurable changes in gloss, hydration, roughness, and transepidermal water loss.

Over the past decade, the gut-skin axis has provided a biologically plausible framework for understanding why oral microbiome-directed interventions may influence visible skin outcomes through immune signaling, microbial metabolites, barrier regulation, and oxidative balance.

The composition examined here combines Lactobacillus reuteri, Lactobacillus rhamnosus, and Lactobacillus plantarum in three dosage-form configurations and compares them with a single-strain L. reuteri reference. Our aim was to present the 28-day comparative evaluation in journal style and interpret it against published oral probiotic clinical trials.

2. Materials and Methods

2.1. Study Design and Participants

We conducted a 28-day comparative human evaluation in adults aged 20-45 years with dull or lackluster skin. Each cohort included 30 participants, and subjects maintained stable diet and lifestyle conditions without additional oral beauty-support products.

ISSN: 2710-0723

2.2. Interventions

Cohort A received a 2:1:1 lyophilized powder, one sachet daily; cohort B received a 1:1:1 hard-capsule formulation, four capsules daily; cohort C received a 5:3:3 tablet formulation, four tablets daily; and the comparator cohort received a single-strain L. reuteri lyophilized powder, one sachet daily.

2.3. Endpoints and Measurements

Our primary endpoint was percentage change in cheek skin radiance at day 28 measured with a gloss meter; the secondary endpoint was change in gut microbiota diversity expressed as the Shannon index from stool 16S rRNA sequencing.

2.4. Retrieval of Public Clinical Evidence

We further searched PubMed, PMC, and public database records through March 2026 for oral probiotic or synbiotic human studies, prioritizing randomized or controlled trials and extracting strain composition, intervention duration, and the main reported skin outcomes.

2.5. Analytical Approach

Because the 28-day dataset was available as cohort-level percentage change without patient-level dispersion metrics, we analyzed those findings descriptively and reproduced only published human outcomes from the public literature.

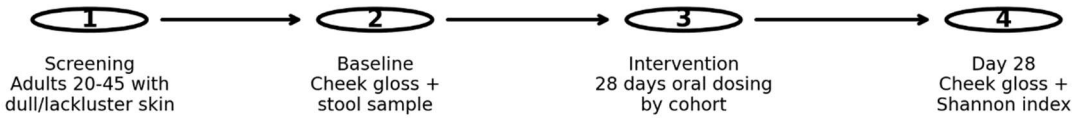

Figure 1. Study timeline for the 28-day human evaluation.

3. Results

3.1. Findings from the 28-Day Comparative Evaluation

Table 1. Summary of the 28-day comparative human evaluation.

Group	Strains	Ratio	Form	Dose/day	n	Radiance	Shannon	Safety
Cohort A	L. reuteri + L. rhamnosus + L. plantarum	2:1:1	Lyophilized powder	1 sachet/day	30	14.2%	22.6%	No AEs
Cohort B	L. reuteri + L. rhamnosus + L. plantarum	1:1:1	Hard capsule	4 caps/day	30	10.8%	18.3%	No AEs
Cohort C	L. reuteri + L. rhamnosus + L. plantarum	5:3:3	Tablet	4 tabs/day	30	11.5%	19.1%	No AEs
Comparator	L. reuteri only	Single strain	Lyophilized powder	1 sachet/day	30	2.7%	5.2%	No AEs

ISSN: 2710-0723

Table 2. Relative advantage of each multi-strain cohort over the single-strain comparator.

Comparison	Radiance difference	Radiance fold	Shannon difference	Shannon fold
Cohort A vs comparator	+11.5 percentage points	5.26x	+17.4 percentage points	4.35x
Cohort B vs comparator	+8.1 percentage points	4.00x	+13.1 percentage points	3.52x
Cohort C vs comparator	+8.8 percentage points	4.26x	+13.9 percentage points	3.67x

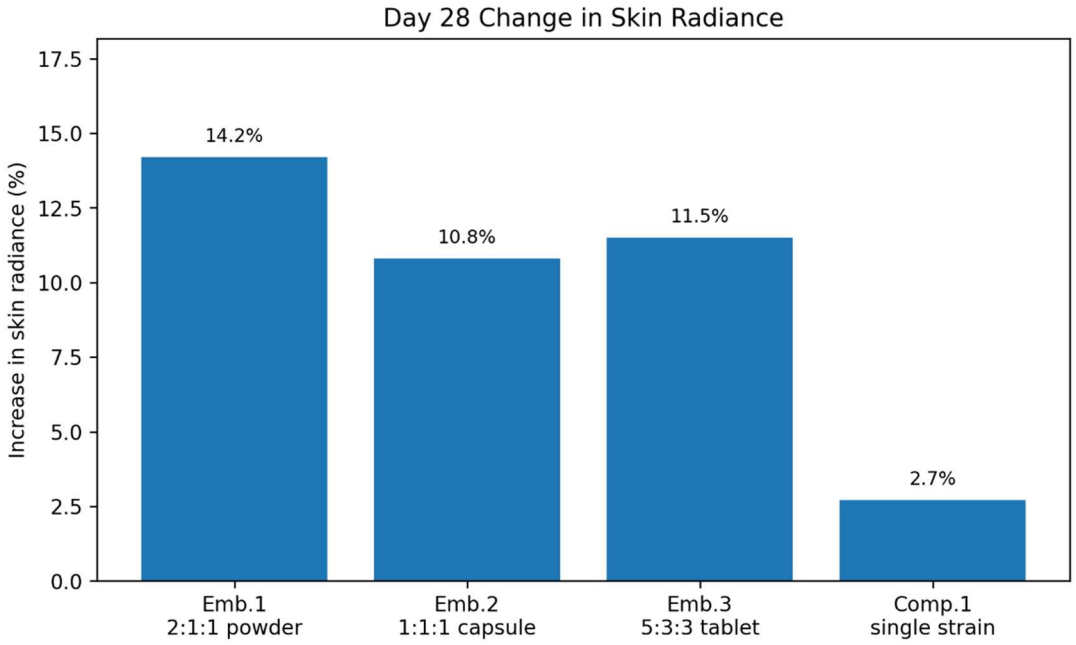

Figure 2. Day-28 change in skin radiance.

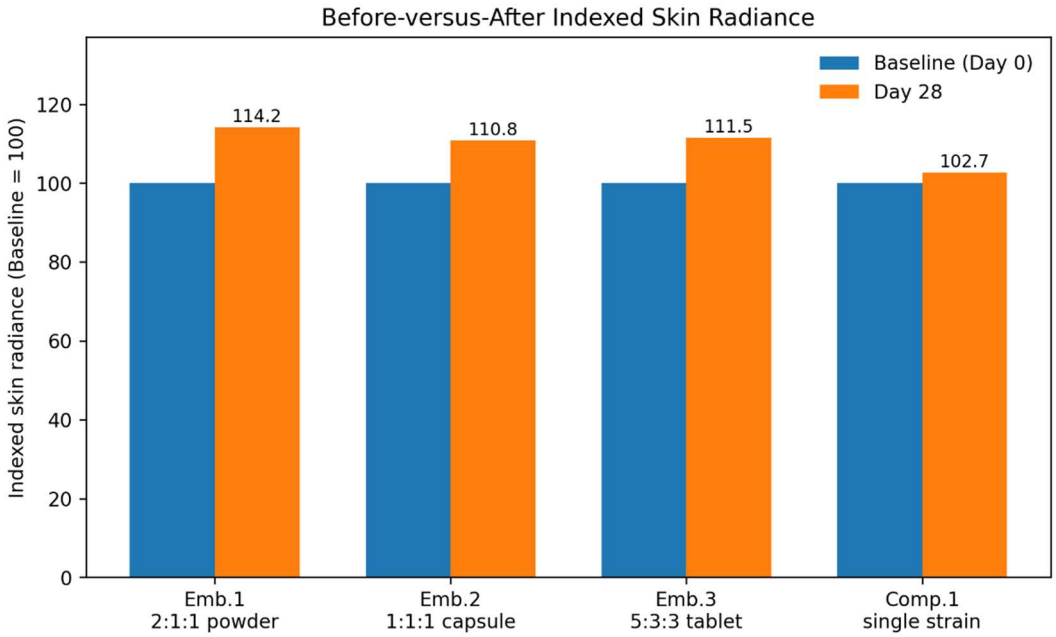

Figure 3. Indexed before-versus-after skin radiance (baseline = 100).

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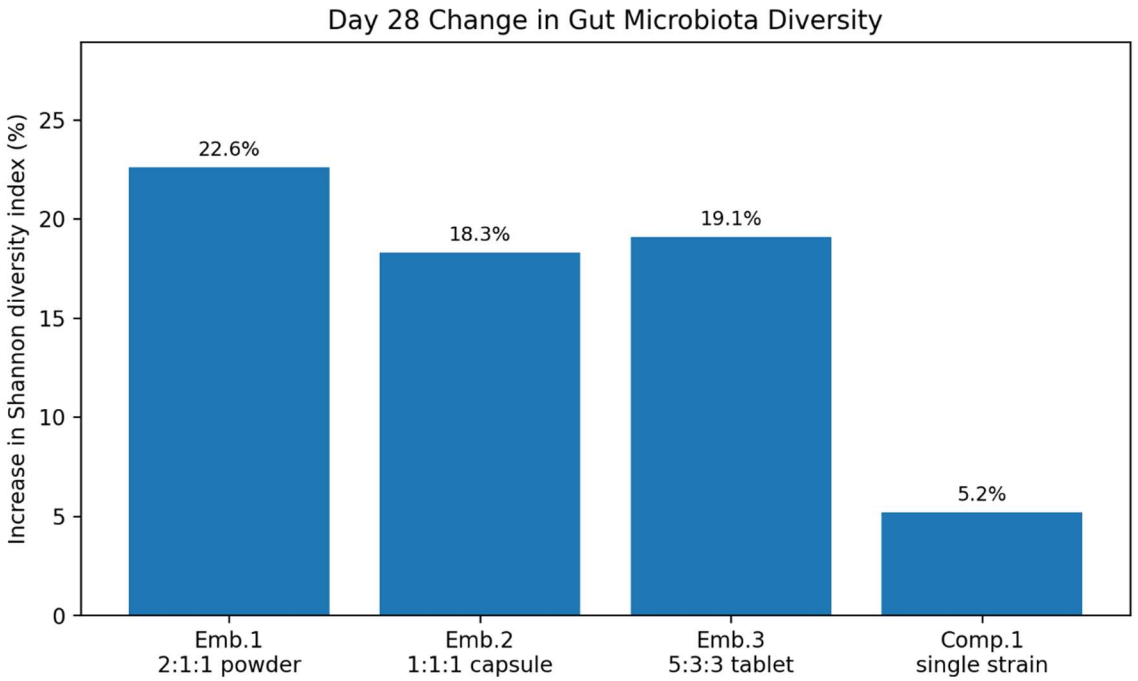

Figure 4. Day-28 change in gut microbiota Shannon diversity.

The strongest 28-day skin-radiance outcome was observed in the 2:1:1 lyophilized-powder cohort, which achieved a mean 14.2% increase at day 28. The 1:1:1 capsule and 5:3:3 tablet cohorts improved by 10.8% and 11.5%, whereas the single-strain comparator improved by only 2.7%.

Gut microbiota diversity changed in the same direction, with Shannon diversity increasing by 22.6%, 18.3%, and 19.1% in the three multi-strain cohorts, compared with 5.2% in the comparator. No adverse reactions were reported.

3.2. Published Human Clinical Trial Evidence

Published human trials and broader clinical reviews support the biological plausibility of oral probiotic effects on skin appearance and barrier-linked outcomes [8]. In a 12-week randomized double-blind placebo-controlled trial in 110 women with dry skin and wrinkles, Lactobacillus plantarum HY7714 improved facial and hand hydration, skin gloss, wrinkle depth, and elasticity [1]. In 40 healthy adult women, fermented milk containing Bifidobacterium breve strain Yakult and GOS helped maintain stratum corneum hydration and improved keratinization- and gut-metabolite-related measures [2].

In reactive skin, oral Lactobacillus paracasei NCC 2461 taken for 2 months decreased skin sensitivity and accelerated barrier-function recovery [3]. Particularly relevant to our composition, Michelotti et al. used a three-lactobacilli mixture containing L. plantarum, L. reuteri, and L. rhamnosus in adults with atopic dermatitis and reported improvements in moisturization, smoothness, self-perception, and SCORAD after 56 days [4].

In acne-related populations, Rinaldi et al. reported a 56.67% GAGS reduction after 8 weeks with a synbiotic supplement, compared with 18.89% in placebo, together with improvements in erythema, desquamation, porphyrins, and sebum [5]. Eguren et al. later found AGSS improvement in 50.0% vs 29.41% of participants and GAGS improvement in 42.50% vs 20.58% in probiotic vs placebo arms, with similar safety [6]. A 2025 meta-analysis further indicated that oral probiotics improved acne severity, total lesion counts, inflammatory and non-inflammatory lesions, hydration, and sebum content at 12 weeks [7].

ISSN: 2710-0723

Table 3. Published oral probiotic/synbiotic clinical evidence relevant to skin appearance.

Published study	Population and intervention	Duration	Key reported human outcomes
Lee et al., 2015 [1]	110 women with dry skin and wrinkles; oral L. plantarum HY7714 vs placebo	12 weeks	Improved facial and hand hydration, reduced wrinkle depth, improved skin gloss, and higher elasticity versus placebo.
Kano et al., 2013 [2]	40 healthy adult women; fermented milk with B. breve strain Yakult + GOS vs placebo	4 weeks	Maintained stratum corneum hydration, increased cathepsin L-like activity, and lowered serum/urine phenol levels.
Gueniche et al., 2014 [3]	Women with reactive skin; oral L. paracasei NCC 2461 vs placebo	2 months	Decreased skin sensitivity and accelerated barrier-function recovery.
Michelotti et al., 2021 [4]	80 adults with atopic dermatitis; L. plantarum + L. reuteri + L. rhamnosus mixture vs placebo	56 days	Improved skin smoothness, moisturization, self-perception, and SCORAD, with reduced inflammatory markers.
Rinaldi et al., 2022 [5]	114 subjects with mild-to-moderate acne; synbiotic supplement vs placebo/active controls	8 weeks	GAGS reduction reached 56.67% vs 18.89% in placebo; erythema, desquamation, porphyrins, and sebum also improved.
Eguren et al., 2024 [6]	Adults with acne vulgaris; oral probiotic capsule vs placebo	12 weeks	AGSS improvement 50.0% vs 29.41% and GAGS improvement 42.50% vs 20.58%; adverse events were similar.
Lin et al., 2025 [7]	Meta-analysis of randomized acne trials (623 patients)	Up to 12 weeks	At 12 weeks, oral probiotics improved severity grading, total lesions, inflammatory and non-inflammatory lesions, hydration, and sebum content.

4. Discussion

Viewed against the public literature, the present 28-day findings are notable because all three multi-strain cohorts consistently exceeded the single-strain comparator for both radiance and microbiota diversity, suggesting that strain complementarity and dosage-form design may both matter for visible skin outcomes.

The overlap in species is also important. Published studies using combinations that include L. plantarum, L. reuteri, and L. rhamnosus provide external support for the biological relevance of the same three-species backbone used here. Although many public trials focus on sensitive skin, atopic dermatitis, or acne rather than dull healthy skin, the gains in moisturization, smoothness, inflammatory tone, and barrier recovery provide a credible translational bridge to radiance-oriented outcomes [4-7].

5. Limitations

The 28-day dataset was available as cohort-level mean percentage change rather than a full patient-level randomized dataset, limiting formal inferential analysis. The public literature is also heterogeneous with respect to strains, formulations, dose, duration, and skin phenotype,

ISSN: 2710-0723

so the current evidence is best interpreted as biological and translational support rather than final confirmation for this exact composition.

6. Conclusion

In conclusion, the BALIMONT multi-strain oral probiotic composition consistently outperformed the single-strain comparator in the 28-day evaluation, with the 2:1:1 lyophilized-powder format showing the strongest overall profile. Interpreted alongside public clinical trial evidence, the current dataset supports a credible microbiome-linked pathway for improving skin appearance and justifies larger, prospectively registered confirmatory trials.

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