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Original Research Article

Efficacy evaluation of a topical formulation containing green tea and willow bark extract for acne and post-acne mark reduction in Indian subjects: a double-blind clinical study

Ravi Kant Shukla[1]*, Rahul Malik[1], Ratna Updhyay[2], Supriya Punyani[1]

[1]Department of R&D, Hindustan Unilever Ltd., Mumbai, India
[2]Department of R&D, OZiva, Zywie Ventures Ltd., Mumbai, India

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***Correspondence:**
Ravi Kant Shukla,
E-mail: Ravikant.shukla@unilever.com

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ABSTRACT

Background: Consumers with acne-prone skin often experience recurring pimples, inflammation, uneven texture and stubborn post-acne dark marks linked to post-inflammatory hyperpigmentation (PIH). These concerns affect skin clarity and even tone, highlighting the need for gentle, effective topical solutions. This clinical study evaluates the efficacy of a topical formulation containing green tea extract actives (5%) and willow bark extract (2%) in reducing acne and acne marks over a 7-day period.
Methods: A double-blind, non-comparative clinical study was conducted on 36 Indian subjects (18 males, 18 females; aged 18–35 years) with mild-to-moderate acne and oily to combination skin. The test product was applied twice daily for 7 days. Efficacy was assessed using the Michaelsson acne severity index, lesion analysis, mexametry for PIH and subject self-evaluation. Safety was evaluated through dermatological assessment of irritation parameters. Measurements were recorded at baseline, day 1, day 3 and day 7.
Results: The test product demonstrated a time-dependent reduction in melanin index associated with acne-induced PIH, with mean reductions of 0.11%, 0.50% and 0.77% at day 1, day 3 and day 7, respectively. By Day 7, improvement in PIH-related acne marks was observed in up to 100% of subjects. Acne severity significantly reduced (-25.72%, $p<0.001$) by day 7, with notable decreases in papule and pustule redness and size and in comedones size. No adverse events or irritation were reported and 100% of subjects agreed the product reduced acne and acne marks.
Conclusions: The formulation effectively reduced acne, PIH-related acne marks and melanin index within 7 days, with good tolerability and no reported irritation or adverse events.

Keywords: Acne, Acne marks, Acne-prone skin, Clinical study, Melanin index, PIH, Post-inflammatory hyperpigmentation

INTRODUCTION

Acne vulgaris is a common inflammatory disorder of the pilosebaceous unit, characterized by comedones, papules, pustules and varying degrees of redness and swelling.[1,2] For consumers, acne is not limited to active breakouts; it is often associated with visible post-acne marks, uneven skin tone and persistent PIH, which can remain after lesions resolve.[3,4] Acne severity and PIH-related acne marks can affect perceived skin clarity, self-confidence, quality of life and social interactions, particularly in individuals with oily or acne-prone skin and skin phototypes more susceptible to hyperpigmentation.[4,5] These concerns create a strong consumer need for solutions that address both active acne and residual acne marks.[5] Current topical acne products generally target

active lesions through effects on sebum production, comedone formation, inflammation and microbial factors, while objective assessment of PIH requires pigmentation-focused measures such as non-invasive melanin evaluation.[2,3] This represents a need gap for gentle, fast-acting topical formulations that can deliver early visible benefits on both acne and PIH-related marks without compromising skin tolerability.

Therefore, this study was conducted to evaluate the early efficacy and safety profile of a topical anti-acne formulation with natural actives in reducing mild-to-moderate acne severity, improving PIH-related acne marks and supporting skin tolerability over 7 days, using clinical grading, instrumental melanin assessment, dermatological evaluation and consumer self-assessment.

METHODS

Study design

This double-blind clinical study was conducted in participants suffering with acne and post-acne marks. The study was conducted by Mascot Spincontrol India Pvt. Ltd., Mumbai, India, during April–May 2026. The study protocol received ethics committee approval and was prospectively registered with the Clinical Trials Registry, India (CTRI/2026/04/109415). Thirty-six healthy Indian male and female subjects were enrolled. The panel included 18 males and 18 females aged 18 to 35 years. Participants had mild-to-moderate acne and oily to mixed oily skin. The enrolled participants had a mean age of 23.3 years, standard deviation of 4.9 years and median age of 22 years (Table 1).

Key inclusion criteria were Indian male or female subjects, age 18 to 35 years, healthy skin on the studied area, mild-to-moderate acne and oily to combination skin. Key non-inclusion criteria included pregnancy or breastfeeding, recent participation in interfering studies, relevant chronic conditions or therapies, diagnosed or probable allergy to product components, recent acne treatments and recent beauty treatments that could interfere with acne, sebum assessments.

Product and application

Participants applied a thin layer of the test product directly on active acne or affected areas twice daily, morning and night, for 7 days. The first application was performed at the investigational site under guidance; subsequent applications were performed at home. Participants were instructed not to rub the product into the skin and not to use other soaps, cleansers or creams on study visits until T+7 days.

Outcome assessments

Assessments were conducted at T0, T+1 day, T+3 days and T+7 days, except subject self-evaluation, which was completed at T+1 day, T+3 days and T+7 days. The assessment battery included subject self-evaluation, dermatologist assessment of cosmetic acceptability, dermatologist efficacy assessment, Mexametry and standardized facial imaging.

Cosmetic acceptability was assessed by a dermatologist for erythema, oedema, dryness, scaling, peeling, itching and tingling.

The evaluation was performed using the following scale.

0: None, 1: Slight, 2: Moderate, 3: Severe

Acne severity was assessed using the Michaelsson Severity Index, a weighted acne lesion scoring approach used to quantify acne severity.[1,2] Lesions were counted and weighed as follows: comedones, 0.5; papules, pustules, infiltrated lesions, cystic lesions. Lesion-level redness and size were graded on a 1 to 5 scale, where lower scores represented less redness or smaller lesion size.

Melanin content of acne PIH was assessed by Mexameter MX 18, a non-invasive narrow-band reflectance instrument commonly used for objective assessment of melanin and erythema-related skin colour changes.[3] Three measurements were performed on a well-defined acne PIH site for each subject and examination time and the mean of the three measurements was used for analysis.

Statistical analysis

Raw values, changes from baseline, descriptive statistics, percentage variation from baseline and the proportion of subjects showing improvement were calculated. Normality was assessed using the Shapiro-Wilk test at a threshold of 1%. Paired comparisons over time were performed using Student tests when normality assumptions were made or Wilcoxon tests when normality was rejected. Statistical significance was assessed using a 95% confidence level, corresponding to a significance threshold of 5%.

RESULTS

Acne severity reduction assessment (michaelson severity index)

The test product showed a progressive and statistically significant reduction in acne severity, assessed using the Michaelson severity index, over 7 days of application. The mean severity index decreased from 17.33 at baseline (T0) to 16.33 at T+1 day, 14.01 at T+3 days and 12.88 at T+7 days. This corresponded to a significant reduction of 5.77%, 19.15% and 25.72% at T+1, T+3 and T+7 days, respectively ($p<0.001$). Improvement was observed in 47% of subjects at T+1 day, 78% at T+3 days and 100% at T+7 days, indicating that the product

contributed to a visible reduction in acne severity over the study period (Figure 1).

Acne lesion assessment

Closed comedones

The test product has demonstrated a progressive improvement in closed comedones over the 7-day evaluation period. The mean skin redness score decreased from 1.17±0.38 at baseline to 1.00±0.00 at Day 7, with the reduction reaching statistical significance at Day 7 ($p=0.0310$; Wilcoxon test). A more pronounced and consistent improvement was observed in lesion size, with mean scores reducing from 2.08±0.28 at baseline to 1.81±0.40 at Day 1, 1.50±0.51 at Day 3 and 1.22±0.42 at Day 7. These reductions in lesion size were statistically significant from Day 1 onwards ($p=0.0020$ at Day 1; $p<0.001$ at Days 3 and 7; Wilcoxon test). Overall, the findings indicate that the test product produced a significant reduction in closed comedone lesion size, accompanied by a significant reduction in redness by Day 7 (Figure 2).

Opened comedones

Test product showed a gradual reduction in mean score of skin redness of open comedones from 1.08±0.28 at baseline to 1.06±0.23 at day 1, 1.03±0.17 at day 3 and 1.00±0.00 at day 7. Although the scores demonstrated a favourable downward trend over time, the reductions were not statistically significant at any evaluated time point compared with baseline ($p>0.05$, Wilcoxon test). For lesion size, a clear and statistically significant improvement was observed following application of the test product. The mean lesion size score decreased from 1.94±0.23 at baseline to 1.78±0.42 at day 1, 1.47±0.51 at day 3 and 1.28±0.45 at day 7. The reduction was statistically significant from Day 1 onwards ($p=0.0310$ at Day 1, $p<0.001$ at Days 3 and 7; Wilcoxon test), indicating a progressive and significant reduction in open comedone size over the 7-day assessment period (Figure 3).

Papules

Application of the test product resulted in a progressive and statistically significant reduction in papule-associated skin redness over the 7 days assessment period. The mean redness score decreased from 2.56±0.73 at baseline to 2.11±0.85 at Day 1, 1.53±0.81 at Day 3 and 1.22±0.54 at Day 7, corresponding to reductions of 17.39%, 40.22% and 52.17%, respectively. These reductions were statistically significant at all post-baseline time points ($p<0.001$, Wilcoxon test). Improvement was observed in 39%, 75% and 94% of participants at day 1, day 3 and day 7, respectively. A significant and progressive reduction in papule lesion size was also observed following product application. The mean lesion size score decreased from 2.69±0.75 at baseline to 2.22±0.87 at Day 1, 1.72±0.78 at Day 3 and 1.39±0.55 at Day 7, representing reductions of 17.53%, 36.08% and 48.45%, respectively. The reductions were statistically significant from Day 1 onwards ($p<0.001$, Wilcoxon test), with 44%, 81% and 89% of participants showing improvement at Day 1, Day 3 and Day 7, respectively (Figure 4).

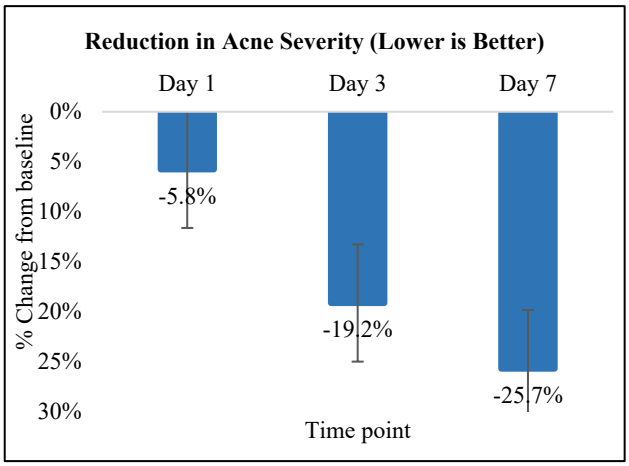


Figure 1: Reduction in acne severity.

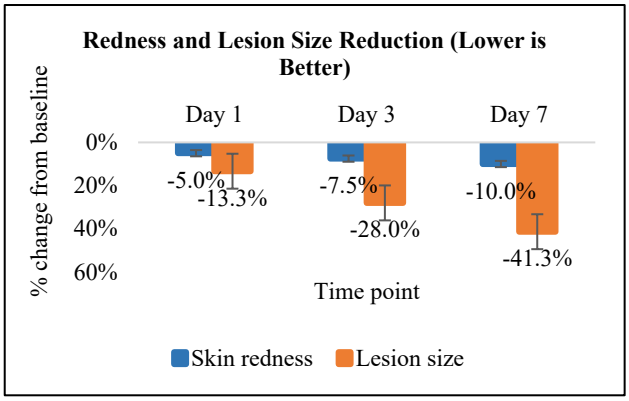


Figure 2: Closed comedones-reduction in lesion size and redness.

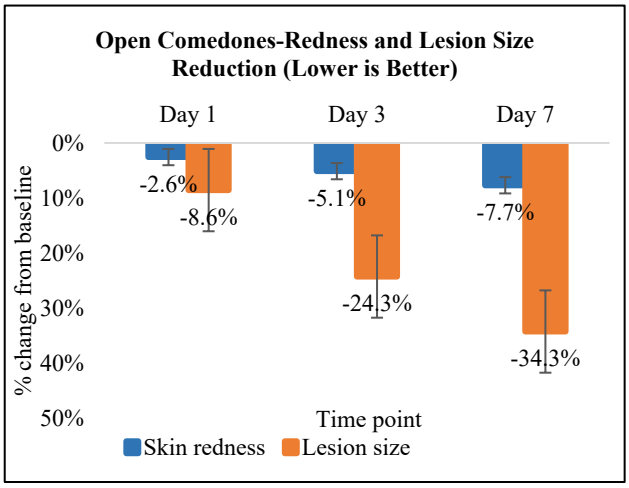


Figure 3: Open comedones reduction in lesion size and redness.

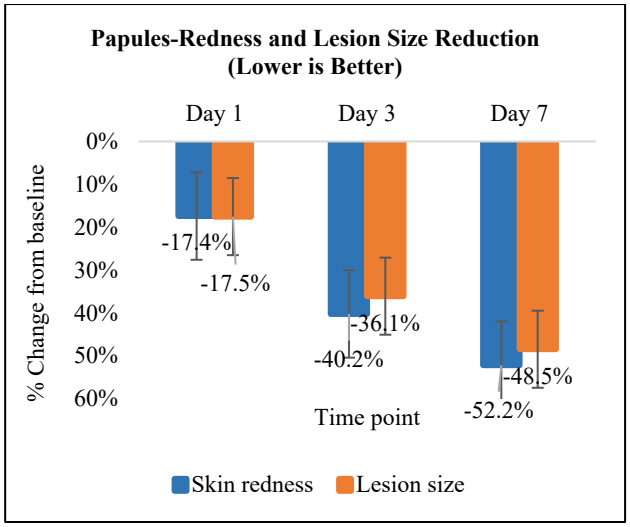


Figure 4: Papules: reduction in size and redness.

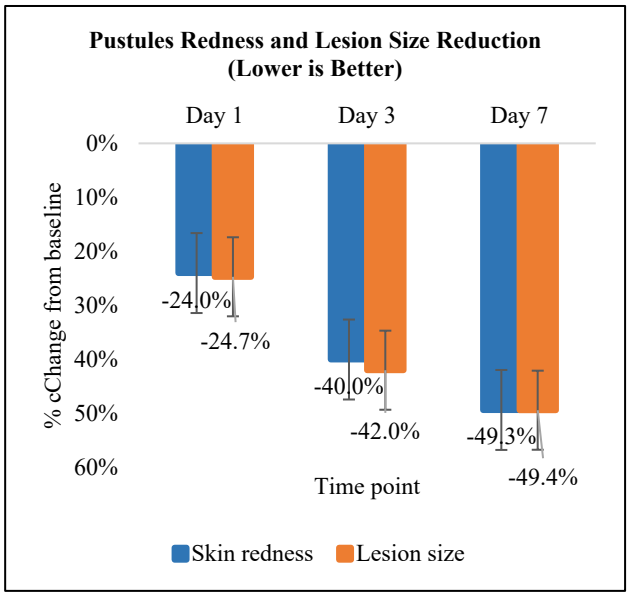


Figure 5: Pustules: reduction in size and redness.

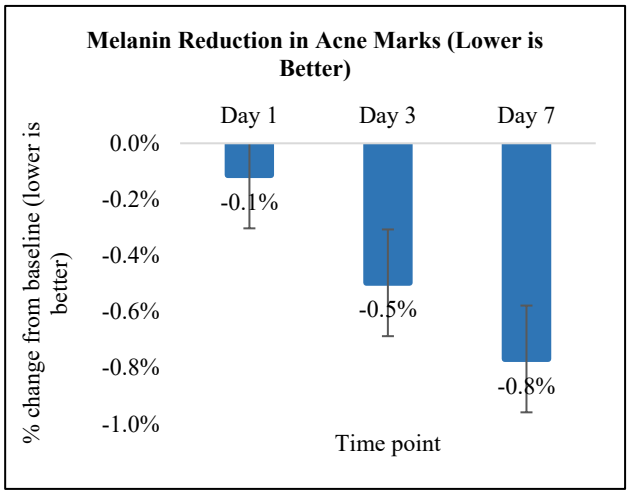


Figure 6: Melanin reduction in acne marks.

Pustules

Application of the test product resulted in a progressive and statistically significant reduction over the 7 days evaluation period. Mean redness scores decreased from 2.08±1.02 at baseline to 1.58±0.77 at day 1, 1.25±0.50 at day 3 and 1.06±0.23 at day 7, corresponding to reductions of 24.00%, 40.00% and 49.33%, respectively. These improvements were statistically significant at all post-baseline time points ($p<0.001$, Wilcoxon test), with 44%, 56% and 61% of participants showing improvement at day 1, day 3 and day 7, respectively. For pustule lesion size, a similar progressive and statistically significant improvement was observed following product application. Mean lesion size scores decreased from 2.25±1.16 at baseline to 1.69±0.82 at day 1, 1.31±0.52 at day 3 and 1.14±0.35 at day 7, representing reductions of 24.69%, 41.98% and 49.38%, respectively. The reductions were statistically significant from Day 1 onwards ($p<0.001$, Wilcoxon test), indicating a sustained decrease in pustule lesion size over the 7-day assessment period (Figure 5).

Acne mark reduction assessment - reduction in post-inflammatory hyperpigmentation

Application of the test product was associated with a statistically significant reduction in melanin content of acne PIH over the 7 days assessment period. Compared with baseline, melanin levels decreased by 0.11%, 0.50% and 0.77% after 1 day, 3 days and 7 days of application, respectively, indicating a progressive reduction in acne marks. This objective melanin-index endpoint is relevant because PIH is a common pigmentary sequela of acne, particularly in skin types susceptible to post-inflammatory pigmentary change.[3,4] Panel-level improvement was observed from day 1 and reached 100% of participants by day 7.

Overall, the significant decrease in melanin levels demonstrates that the test product was effective in reducing the intensity of acne marks associated with PIH (Figure 6).

Safety and tolerability

Based on the dermatological evaluation of cosmetic acceptability, the test product demonstrated good cutaneous tolerability, with no observed incidence of erythema, oedema, dryness, scaling, peeling, itching or tingling at any assessed time point.

Table 1: Demographics and volunteers characteristics at baseline.

Age range (in years)	18-35 years
Study population-N (male: female)	36 (18 Male and 18 Female)
Study location	Mumbai (India)

DISCUSSION

The test product is a topical anti-acne and acne-mark reduction formulation designed for oily to combination, acne-prone skin. It was applied as a thin layer directly over active acne lesions or affected areas twice daily for 7 days. The product concept is based on a multi-target approach: reducing visible acne severity, reducing comedonal and inflammatory lesion characteristics, supporting sebum balance, calming visible redness and helping reduce PIH-related acne marks without compromising cutaneous tolerability.

The formulation ingredients appear relevant to the dual objective of reducing acne and acne marks. Green tea extract is rich in catechins, particularly *epigallocatechin gallate* (EGCG) and may support acne-prone skin through antioxidant, anti-inflammatory, antimicrobial and sebum-modulating effects.[6,13,14] Willow bark extract, a botanical source of salicin, polyphenols, flavonoids and tannins, may provide gentle skin-conditioning, antioxidant, astringent and soothing benefits that are relevant for blemish-prone skin.[7]

Licorice extract contains bioactive flavonoids such as glabridin, liquiritin and licochalcone A, which are associated with anti-inflammatory, antioxidant, anti-acne, tyrosinase-modulating and skin tone-evening effects; these properties are particularly relevant for PIH-related acne marks.[9,15,16] *Centella asiatica* (CICA) extract contains triterpenoids such as asiaticoside, madecassoside, asiatic acid and madecassic acid, which may help calm inflammation, support barrier comfort, promote repair processes and reduce visible redness around acne lesions.[8,17,18] In addition, ALPAFLOR® ALP-SEBUM (Supplier DSM, Key actives-*Epilobium fleischeri* extract) may contribute to sebum regulation and shine control, helping reduce excess surface oil that can contribute to pore blockage and recurring breakouts.[10-12] Together, these complementary mechanisms may explain the observed reductions in comedone size, inflammatory lesion redness and size, melanin index and PIH-related acne marks, while maintaining favourable tolerability.

Green tea extract may contribute to acne-prone skin benefits through catechin polyphenols such as *epigallocatechin gallate* (EGCG). Published reviews and clinical studies indicate that tea polyphenols possess antioxidant, antimicrobial and anti-inflammatory properties, with evidence supporting topical green tea polyphenols for reducing sebum secretion and improving acne vulgaris.[6,13,14] These properties are relevant to the observed reduction in acne severity and inflammatory lesion redness in the present study. Willow bark extract, obtained from Salix species, is commonly used in cosmetic formulations for oily and blemish-prone skin because it contains salicin along with polyphenols, flavonoids and tannins. These constituents may provide skin-conditioning, antioxidant, astringent and soothing benefits relevant to blemish-prone skin.[7] In the context of the study formulation, willow bark extract may support the overall blemish-prone skin positioning while maintaining a gentler tolerability profile than stronger direct-acid approaches. Licorice extract is relevant to both acne and PIH-related acne marks. Reviews on glycyrrhiza species report anti-inflammatory, antioxidant, antimicrobial, depigmenting and skin-turnover-supporting properties that may be useful for acne vulgaris and associated post-inflammatory hyperpigmentation.[9] Key constituents such as glabridin, liquiritin, glycyrrhizin derivatives and licochalcone A are associated with tyrosinase modulation, melanin dispersion and inflammation control.[9,15,16] These mechanisms support the observed improvement in melanin index and visible acne marks.

CICA extract may support the formulation's calming and skin-repair positioning. Dermatology-focused reviews describe *Centella asiatica* and its triterpenoid constituents, including asiaticoside, madecassoside, asiatic acid and madecassic acid, as agents that can modulate inflammation, provide antioxidant protection, support collagen synthesis and aid wound-healing processes.[8,17,18] These activities are relevant for acne-prone skin, where calming inflammation and supporting recovery after lesions may help reduce visible redness and improve the appearance of post-acne marks.

ALPAFLOR® ALP-SEBUM (supplier DSM, key actives glycerin, water, *Epilobium fleischeri* extract) based on *Epilobium fleischeri* flower/leaf/stem extract, is positioned in supplier documentation as a botanical active for oily and acne-prone skin.[10] Peer-reviewed evidence indicates that *Epilobium fleischeri* extract may support sebum regulation through 5-alpha-reductase inhibition and may modulate facial microbiota structure, while additional mechanistic evidence from Epilobium species supports 5-alpha-reductase inhibitory activity of ellagitannins such as oenothein A and oenothein B.[11,12] This scientific rationale supports its inclusion in the formulation for reducing excess surface oil, limiting pore blockage and complementing the acne and acne-mark reduction benefits observed clinically.

Although a direct head-to-head comparison with salicylic acid was beyond the scope of the present study, the current findings can be cautiously contextualized against the published salicylic acid literature. Salicylic acid is a well-established topical acne treatment, with clinical efficacy typically demonstrated over several weeks of use. In a 21-day prospective study, Liu et al evaluated a 2% salicylic acid-containing gel applied twice daily and reported progressive improvement in investigator global assessment (IGA)-graded acne severity, with reductions of 6.67% at day 2, 18.10% at day 10 and 23.81% by day 21.[19] Similarly, Li et al evaluated photodynamic therapy, 2% supramolecular salicylic acid therapy and their

combination in moderate acne; in the 2% salicylic acid-only arm, lesion counts decreased by 8.62% at week one and by 39.21% by week three.[20] In the present study, Test product A demonstrated a 25.72% reduction in the Michaelsson severity index by day 7. These data should not be interpreted as directly comparable, as they were generated from different study populations, acne assessment instruments (IGA scoring and lesion counts versus the MSI), product formats, application regimens and study designs, with no shared control arm.

Nevertheless, when viewed alongside the early-response patterns reported for 2% salicylic acid-based interventions the day 7 response observed with test product a provides a reasonable basis to hypothesize that test product A may offer a rapid onset of visible anti-acne effect comparable to established salicylic acid-based treatments. Confirmation of this hypothesis would require a prospective, randomized, head-to-head clinical trial using matched endpoints, standardized evaluators and appropriate controls.[19,20]

This study provides early clinical evidence for the formulation; however, modest sample size, restricted study population and non-comparative design without active comparator limit the interpretation of product-specific effects.

Future studies should use larger, randomized, controlled and longer-duration designs across diverse skin types and acne severities. Additional sebum, microbiome, photographic, subject-reported and post-discontinuation assessments would help confirm sustained efficacy, mechanism of action and broader consumer relevance.

CONCLUSION

In conclusion, the findings indicate that the topical formulation produced early and measurable improvements in mild-to-moderate acne and PIH-related acne marks over 7 days, with significant reductions in acne severity, inflammatory lesion redness and size, comedone size and melanin index. The multi-active formulation, comprising botanical and sebum-regulating ingredients, appears to support complementary benefits on oiliness, inflammation, lesion recovery and uneven skin tone, consistent with published evidence on green tea polyphenols, willow bark, licorice, *Centella asiatica* and epilobium-derived sebum-regulating actives.[6-18]

Importantly, the product was well tolerated, with no reported adverse events or dermatologist-observed irritation. These results support the formulation as a gentle topical option for improving acne-prone skin and acne marks, although longer-duration controlled studies are warranted to confirm sustained efficacy and comparative benefits.

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Conflict of interest: Authors are the employee of Hindustan Unilever Ltd and OZiva, Zywie Ventures Ltd, Mumbai India
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Reynolds RV, Yeung H, Cheng CE, Cook-Bolden F, Desai SR, Druby KM, et al. Guidelines of care for the management of *acne vulgaris*. J Am Acad Dermatol. 2024;90(5):1006-30.
2. Huang L, Yang S, Yu X, Fang F, Zhu L, Wang L, et al. Association of different cell types and inflammation in early acne vulgaris. Front Immunol. 2024;15:1275269.
3. Silpa-archa N, Kohli I, Chaowattanapanit S, Lim HW, Hamzavi I. Postinflammatory hyperpigmentation: A comprehensive overview. J Am Acad Dermatol. 2017;77(4):591-605.
4. França K, Keri J. Psychosocial impact of acne and postinflammatory hyperpigmentation. An Bras Dermatol. 2017;92(4):505-9.
5. Schuster B, Gallinger J, Philipp-Dormston WG, Vasel M, Layton AM. Less confident, successful and happy: patients with post-acne hyperpigmentation are stigmatized. Br J Dermatol. 2023;188(5):682-4.
6. Saric S, Notay M, Sivamani RK. Green tea and other tea polyphenols: effects on sebum production and acne vulgaris. Antioxidants. 2017;6(1):2.
7. SpecialChem. Salix alba bark extract: cosmetic ingredient INCI. Available at: https://www.specialchem.com/cosmetics/inci-ingredients/salix-alba-bark-extract. Accessed on 10 March 2026.
8. Witkowska K, Paczkowska-Walendowska M, Garbiec E, Cielecka-Piontek J. Topical application of Centella asiatica in wound healing: recent insights into mechanisms and clinical efficacy. Pharmaceutics. 2024;16(10):1252.
9. Raoufinejad K, Rajabi M, Sarafian G. Licorice in the treatment of acne vulgaris and postinflammatory hyperpigmentation: a review. J Pharm Care. 2020;8(4):186-95.
10. DSM-Firmenich. ALPAFLOR® ALP-SEBUM CB: organic prebiotic—visible care for oily skin. Product information page. Available at: https://www.dsm-firmenich.com/en/businesses/perfumery-beauty/beauty-care/products/alpaflor-alp-sebum-cb.html. Accessed on 10 March 2026.
11. Sfriso R, Claypool J, Roche M, Imfeld D. 5-α reductase inhibition by Epilobium fleischeri extract modulates facial microbiota structure. Int J Cosmet Sci. 2022;44(4):440-52.
12. Ducrey B, Marston A, Göhring S, Hartmann RW, Hostettmann K. Inhibition of 5 alpha-reductase and

aromatase by the ellagitannins oenothein A and oenothein B from Epilobium species. Planta Med. 1997;63(2):111-4.
13. Yoon JY, Kwon HH, Min SU, Thiboutot DM, Suh DH. Epigallocatechin-3-gallate improves acne in humans by modulating intracellular molecular targets and inhibiting P. acnes. J Invest Dermatol. 2012;132(7):1863-9.
14. Chilicka K, Rogowska AM, Rusztowicz M, Szyguła R, Yanakieva A, Asanova B, et al. The effects of green tea (*Camellia sinensis*), bamboo extract (*Bambusa vulgaris*) and lactic acid on sebum production in young women with acne vulgaris using sonophoresis treatment. Healthcare (Basel). 2022;10(4):684.
15. Dall'Oglio F, Fabbrocini G, Tedeschi A, Donnarumma M, Chiodini P, Micali G. Licochalcone A in combination with salicylic acid as fluid based and hydroxy-complex 10% cream for the treatment of mild acne: a multicenter prospective trial. Clin Cosmet Investig Dermatol. 2019;12:961-7.
16. Kumari A, Kumar R, Sulabh G, Singh P, Kumar J, Singh VK, et al. In silico ADMET, molecular docking and molecular simulation-based study of glabridin's natural and semisynthetic derivatives as potential tyrosinase inhibitors. Adv Tradit Med. 2022;4:76-9.
17. Arribas-López E, Zand N, Ojo O, Snowden MJ, Kochhar T. A systematic review of the effect of Centella asiatica on wound healing. Int J Environ Res Public Health. 2022;19(6):3266.
18. Diniz LRL, Calado LL, Duarte ABS, de Sousa DP. Centella asiatica and its metabolite asiatic acid: wound healing effects and therapeutic potential. Metabolites. 2023;13(2):276.
19. Liu Y, Dan Y, Yang J. Clinical efficacy of a salicylic acid-containing gel on acne management and skin barrier function: a 21-day prospective study. J Cosmet Dermatol. 2025;24(7):70353.
20. Li L, Huang Y, Lai J, Lin X. Effectiveness of photodynamic therapy, 2% salicylic acid and their combination for moderate acne. Clin Cosmet Investig Dermatol. 2025;18:1783-90.

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