

Efficacy and Safety of Ruxolitinib Cream for the Treatment of Vitiligo by Patient Demographics and Baseline Clinical Characteristics: Pooled Subgroup Analysis From Two Randomized Phase 3 Studies

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Introduction

- Vitiligo is a chronic autoimmune disease that targets melanocytes, resulting in patches of skin depigmentation¹
- Factors including skin phototype and disease duration may affect treatment efficacy in patients with vitiligo^{2,3}
- A cream formulation of ruxolitinib, a Janus kinase (JAK) 1/JAK2 inhibitor, demonstrated substantial repigmentation over 52 weeks in a phase 2, dose-ranging, randomized study in adult patients with vitiligo (NCT03099304)⁴
- Two phase 3 Topical Ruxolitinib Evaluation in Vitiligo studies (TRuE-V1 and TRuE-V2) were conducted in larger patient populations

Objective

- To evaluate the efficacy and safety of ruxolitinib cream based on patient demographics and baseline clinical characteristics following 24 weeks of double-blind treatment using pooled data from two phase 3 studies of adults and adolescents with nonsegmental vitiligo (TRuE-V1 [NCT04052425], TRuE-V2 [NCT04057573])

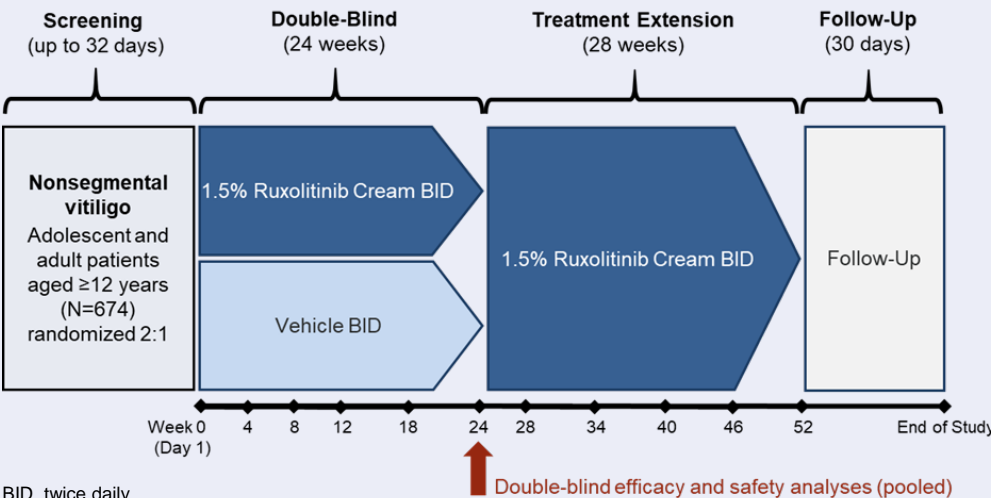
Methods

Patients and Study Design

- Eligible patients were aged ≥12 years with a diagnosis of nonsegmental vitiligo and depigmented areas covering ≤10% total body surface area (BSA), including ≥0.5% BSA on the face and ≥3% BSA on non-facial areas, scores ≥0.5 on facial Vitiligo Area Scoring Index (F-VASI), and scores ≥3 on total VASI (T-VASI)

- Key exclusion criteria were the presence of complete leukotrichia within any facial lesions, dermatologic disease confounding vitiligo assessment, previous use of JAK inhibitor therapy, and use of the following therapies for vitiligo before baseline: any biological or experimental therapy within 12 weeks (or 5 half-lives), phototherapy within 8 weeks, immunomodulating treatments within 4 weeks, or topical treatments within 1 week
- Patients were stratified by geographic region (North America and Europe) and Fitzpatrick skin phototype (types I–II or types III–VI) and were randomized 2:1 to apply 1.5% ruxolitinib cream twice daily (BID) or vehicle BID for 24 weeks (**Figure 1**); subgroup analyses (stratification per protocol and statistical analysis plan) of pooled data per interim analyses at Week 24 are reported here
 - After completion of the Week 24 visit, all patients could apply 1.5% ruxolitinib cream BID for an additional 28 weeks in the open-label treatment extension

Figure 1. Study Design



Assessments

- The primary endpoint was the proportion of patients achieving ≥75% improvement from baseline in F-VASI (F-VASI75) at Week 24
- The safety and tolerability of ruxolitinib cream were also assessed
- Subgroup analyses investigated F-VASI75 response and safety at Week 24 by patient demographics and baseline clinical characteristics
 - Analyses included age, sex, race, Fitzpatrick skin phototype, geographic region, facial BSA (F-BSA), investigator-assessed disease stability, and previous therapy


Statistical Analyses

- Data are reported as observed, and subgroup analyses were summarized using descriptive statistics

Results

Patients

- TRuE-V1/TRuE-V2 randomized 674 patients (ruxolitinib cream, n=450; vehicle, n=224) with a mean (SD) age of 39.6 (15.1) years (**Table 1**)
 - The distribution of baseline disease characteristics was similar for patients randomized to ruxolitinib cream or vehicle



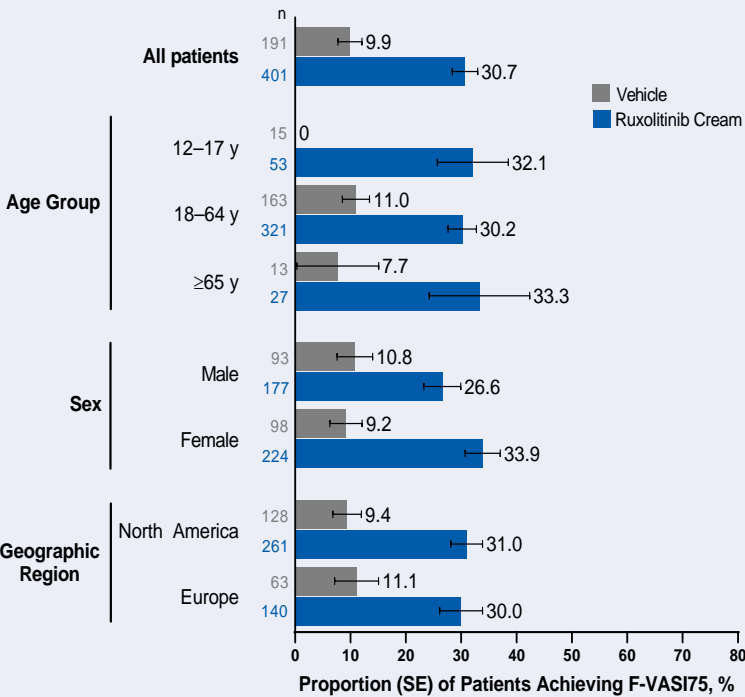
| Characteristic | Vehicle (n=224) | Ruxolitinib Cream (n=450) | Total (N=674) |
|-----------------------------------|--------------------|------------------------------|------------------|
| Age, mean (SD), y | 39.7 (14.5) | 39.5 (15.4) | 39.6 (15.1) |
| Age group, n (%), y | | | |
| 12–17 | 17 (7.6) | 55 (12.2) | 72 (10.7) |
| 18–64 | 191 (85.3) | 366 (81.3) | 557 (82.6) |
| ≥65 | 16 (7.1) | 29 (6.4) | 45 (6.7) |
| Sex, n (%) | | | |
| Male | 114 (50.9) | 202 (44.9) | 316 (46.9) |
| Female | 110 (49.1) | 248 (55.1) | 358 (53.1) |
| Geographic region, n (%) | | | |
| North America | 156 (69.6) | 308 (68.4) | 464 (68.8) |
| Europe | 68 (30.4) | 142 (31.6) | 210 (31.2) |
| Race, n (%) | | | |
| White | 189 (84.4) | 363 (80.7) | 552 (81.9) |
| Black | 9 (4.0) | 23 (5.1) | 32 (4.7) |
| Asian | 11 (4.9) | 17 (3.8) | 28 (4.2) |
| Other* | 9 (4.0) | 28 (6.2) | 37 (5.5) |
| Not reported | 6 (2.7) | 19 (4.2) | 25 (3.7) |
| Fitzpatrick skin phototype, n (%) | | | |
| I–II | 76 (33.9) | 143 (31.8) | 219 (32.5) |
| III–VI | 148 (66.1) | 307 (68.2) | 455 (67.5) |
| F-BSA,† mean (SD), % | 1.03 (0.65) | 1.02 (0.63) | 1.02 (0.64) |
| <1.5, n (%) | 185 (82.6) | 361 (80.2) | 546 (81.0) |
| ≥1.5, n (%) | 39 (17.4) | 89 (19.8) | 128 (19.0) |
| Disease stability,‡ n (%) | | | |
| Stable | 168 (75.0) | 331 (73.6) | 499 (74.0) |
| Progressive | 56 (25.0) | 119 (26.4) | 175 (26.0) |
| Prior therapy,§ n (%) | | | |
| TCS | 56 (25.0) | 133 (29.6) | 189 (28.0) |
| TCI | 68 (30.4) | 146 (32.4) | 214 (31.8) |
| Phototherapy | 77 (34.4) | 138 (30.7) | 215 (31.9) |

F-BSA, facial body surface area; F-VASI, facial Vitiligo Area Scoring Index; NB-UVB, narrow-band ultraviolet-B; PUVA, psoralen ultraviolet A; TCI, topical calcineurin inhibitor; TCS, topical corticosteroid; T-VASI, total Vitiligo Area Scoring Index.
* Includes American Indian/Alaska Native, Native Hawaiian/Pacific Islander, and "Other."
† Percentage of total BSA.
‡ Determination of disease stability was based on investigator judgment.
§ Patients could have used multiple previous lines of therapy.
|| Phototherapy includes NB-UVB phototherapy, excimer laser, and PUVA photochemotherapy.

Efficacy

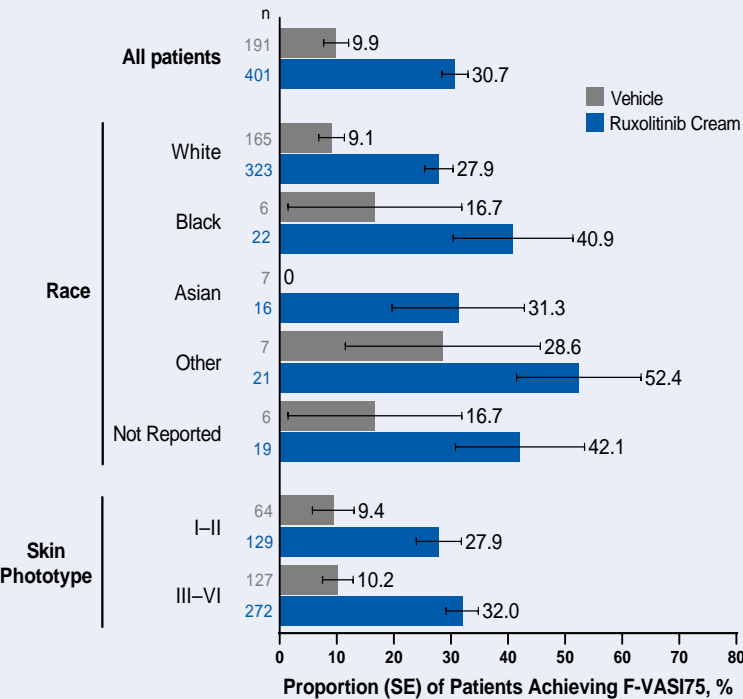
- At Week 24, the primary endpoint of F-VASI75 was achieved by a significantly greater proportion of patients applying ruxolitinib cream vs vehicle (30.7% vs 9.9%; $P<0.0001$)
- Greater F-VASI75 response rates for ruxolitinib cream vs vehicle were observed at Week 24 across age groups and regardless of sex and geographic region; there were no substantial differences among subgroups (Figure 2)

Figure 2. F-VASI75 Response by Age Group, Sex, and Geographic Region



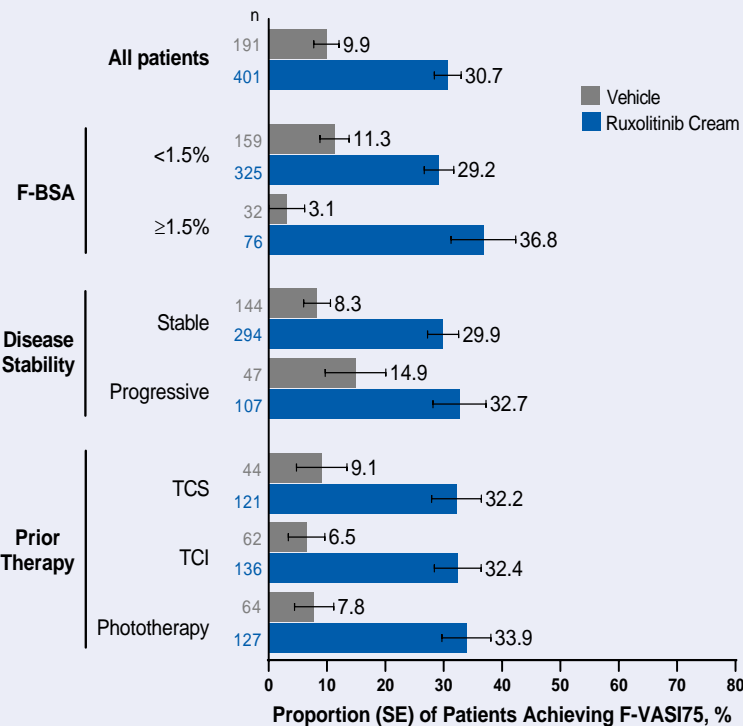
- F-VASI75 response rates were greater with ruxolitinib cream vs vehicle at Week 24 regardless of race or Fitzpatrick skin phototype (Figure 3)
 - Subgroup analyses of race were limited by small patient numbers in Black, Asian, and Other groups

Figure 3. F-VASI75 Response by Race and Fitzpatrick Skin Phototype



- F-VASI75 response rates with ruxolitinib cream vs vehicle at Week 24 were greater regardless of baseline clinical characteristics including F-BSA, investigator-assessed disease stability, and prior therapy (Figure 4)
 - There were no substantial differences among subgroups of patients who applied ruxolitinib cream

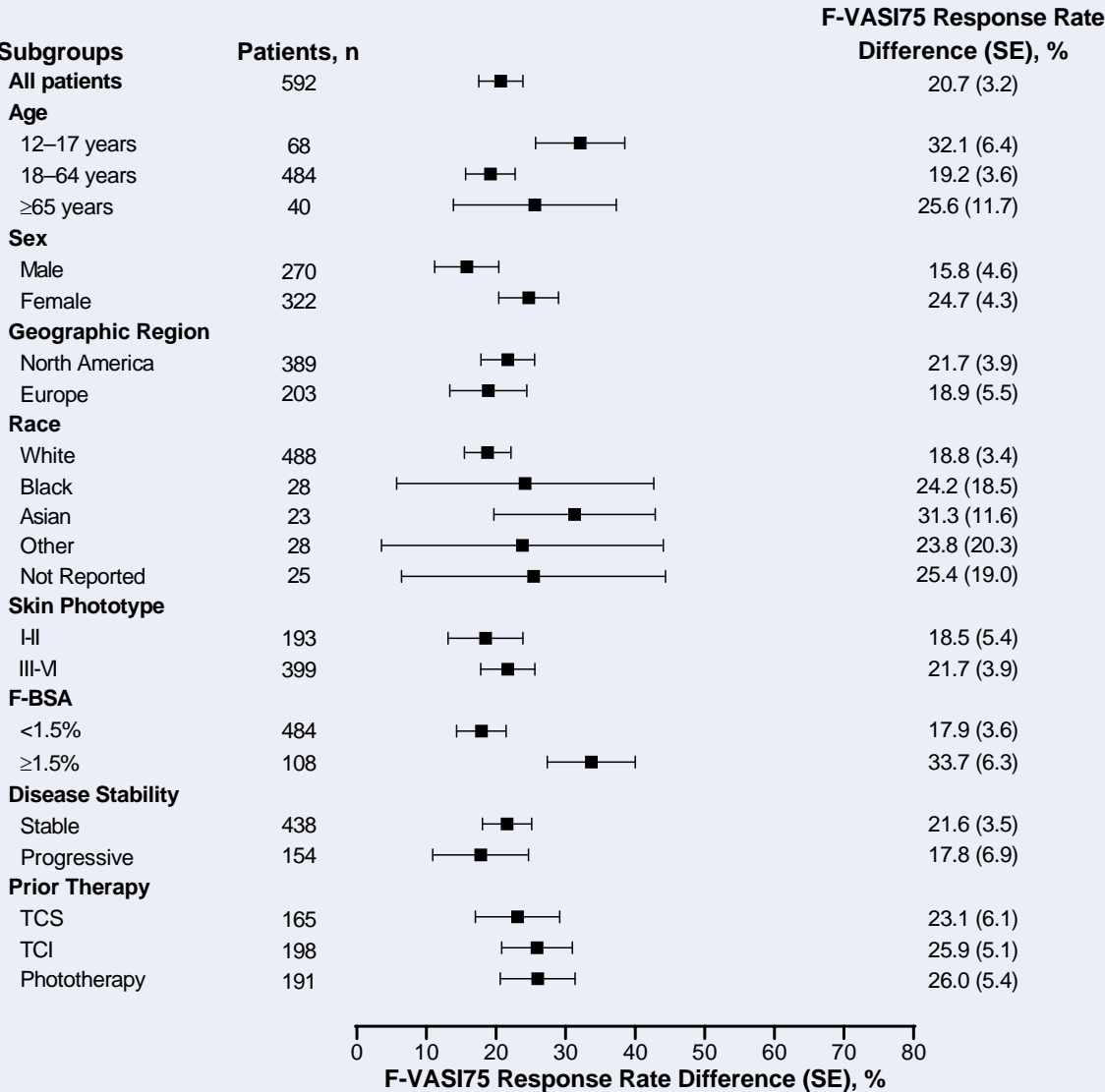
Figure 4. F-VASI75 Response by Clinical Characteristics



F-BSA, facial body surface area; F-VASI75, ≥75% improvement in facial Vitiligo Area Scoring Index; TCI, topical calcineurin inhibitor; TCS, topical corticosteroid. Data per interim analyses at Week 24 are reported as observed.

- Substantive F-VASI75 response rate differences between ruxolitinib cream and vehicle were observed in all subgroups of patient demographics and baseline clinical characteristics (**Figure 5**)

Figure 5. F-VASI75 Response Rate Differences Between Ruxolitinib Cream and Vehicle



F-BSA, facial body surface area; F-VASI75, ≥75% improvement in facial Vitiligo Area Scoring Index; TCI, topical calcineurin inhibitor; TCS, topical corticosteroid.
Data per interim analyses at Week 24 are reported as observed.

Safety

- Ruxolitinib cream was generally well tolerated in TRuE-V1/TRuE-V2
 - Rates of adverse events and treatment-related adverse events were generally similar among demographic subgroups of patients who applied ruxolitinib cream (**Table 2**)

Table 2. TEAEs Through 24 Weeks of Double-Blind Treatment (Safety Population)

| Subgroups, n (%) | Vehicle | | | Ruxolitinib Cream | | |
|-------------------|---------|-----------|----------------------|-------------------|------------|----------------------|
| | n | TEAE | Treatment-Related AE | n | TEAE | Treatment-Related AE |
| All patients | 224 | 79 (35.3) | 17 (7.6) | 449* | 214 (47.7) | 66 (14.7) |
| Age groups | | | | | | |
| 12–17 y | 17 | 6 (35.3) | 0 | 55 | 31 (56.4) | 9 (16.4) |
| 18–64 y | 191 | 64 (33.5) | 14 (7.3) | 366 | 172 (47.0) | 53 (14.5) |
| ≥65 y | 16 | 9 (56.3) | 3 (18.8) | 28 | 11 (39.3) | 4 (14.3) |
| Sex | | | | | | |
| Male | 114 | 29 (25.4) | 3 (2.6) | 201 | 85 (42.3) | 20 (10.0) |
| Female | 110 | 50 (45.5) | 14 (12.7) | 248 | 129 (52.0) | 46 (18.5) |
| Geographic region | | | | | | |
| North America | 156 | 47 (30.1) | 13 (8.3) | 307 | 131 (42.7) | 41 (13.4) |
| Europe | 68 | 32 (47.1) | 4 (5.9) | 142 | 83 (58.5) | 25 (17.6) |
| Race | | | | | | |
| White | 189 | 67 (35.4) | 14 (7.4) | 362 | 174 (48.1) | 53 (14.6) |
| Black | 9 | 1 (11.1) | 0 | 23 | 8 (34.8) | 1 (4.3) |
| Asian | 11 | 0 | 0 | 17 | 4 (23.5) | 1 (5.9) |
| Other† | 9 | 6 (66.7) | 2 (22.2) | 28 | 11 (39.3) | 3 (10.7) |
| Not reported | 6 | 5 (83.3) | 1 (16.7) | 19 | 17 (89.5) | 8 (42.1) |

AE, adverse event; TEAE, treatment-emergent adverse event.
* 1 patient who did not apply ≥1 dose of ruxolitinib cream was excluded from the safety population.
† Includes American Indian/Alaska Native, Native Hawaiian/Pacific Islander, and “Other.”
Data per interim analyses at Week 24 are reported.

Conclusions

- **Ruxolitinib cream demonstrated similar efficacy (F-VASI75 response rates) in patients with vitiligo regardless of demographic or clinical characteristic subgroup**
- **Ruxolitinib cream was well tolerated in all demographic subgroups**
- **These results demonstrate the potential of ruxolitinib cream as an effective and well-tolerated topical treatment for patients with vitiligo across subgroups**

Disclosures

DR has received honoraria as a consultant for AbbVie, Abcuro, AltruBio, Boehringer Ingelheim, Bristol Myers Squibb, Celgene, Concert, Dermavant Sciences, Dermira, Incyte Corporation, Janssen, Kyowa Kirin, Lilly, Novartis, Pfizer, Regeneron Pharmaceuticals, Sanofi, Sun Pharmaceuticals, UCB, and Viela Bio; has received research support from AbbVie, Amgen, Bristol Myers Squibb, Celgene, Dermira, Galderma, Incyte Corporation, Janssen, Lilly, Merck, Novartis, Pfizer, and Regeneron Pharmaceuticals; and has served as a paid speaker for AbbVie, Amgen, Celgene, Janssen, Lilly, Novartis, Pfizer, Regeneron Pharmaceuticals, and Sanofi. KE is a consultant for AbbVie, Incyte Corporation, La Roche-Posay, Pfizer, Pierre Fabre, Sanofi, and Viela Bio. SRD has received fees and/or honoraria as a consultant for Almirall, Avita, Bristol Myers Squibb, Cassiopea SpA, Dermira, EPI Health, Ferndale Laboratories, Foamix, Galderma Laboratories LP, Incyte Corporation, Ortho Dermatologics, Pfizer, Scientis, Sente Labs, SkinCeuticals LLC, UCB, and Verrica Pharmaceuticals; has received stock options as a consultant for Gore Range Capital; has received honoraria as a speaker for Almirall, Galderma, and Ortho Dermatologics; has received grants/research funding as an investigator for AbbVie, AOBiome LLC, Atacama Therapeutics, Brickell Biotech, Dermavant Sciences, and Incyte Corporation; has served as an advisory board member for Dermavant Sciences and the Foundation for Research & Education of Dermatology; and is a stockholder of Gore Range Capital. JS has received grants and/or honoraria from AbbVie, Bristol Myers Squibb, Calypso Biotech, Eli Lilly, Incyte Corporation, LEO Pharma, Novartis, Pfizer, Pierre Fabre, Sanofi, Sun Pharmaceuticals, and Viela Bio; and has patents on MMP9 inhibitors and uses thereof in the prevention or treatment of a depigmenting disorder and three-dimensional model of depigmenting disorder. DK, KS, and KB are employees and shareholders of Incyte Corporation. TP has received grants and/or honoraria from AbbVie, ACM Pharma, Almirall, Amgen, Astellas, Bristol Myers Squibb, Celgene, Eli Lilly, Galderma, Genzyme/Sanofi, GlaxoSmithKline, Incyte Corporation, Janssen, LEO Pharma, Novartis, Pfizer, Sun Pharmaceuticals, and UCB; is the cofounder of YUKIN Therapeutics; and has patents on WNT agonists or GSK3b antagonist for repigmentation of vitiligo and on the use of CXCR3B blockers in vitiligo.

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References

1. Rodrigues M, et al. *J Am Acad Dermatol*. 2017;77(1):1-13. 2. Hallaji Z, et al. *Photodermatol Photoimmunol Photomed*. 2012;28(3):115-119. 3. Cazzaniga S, et al. *Dermatology*. 2009;219(2):133-137. 4. Rosmarin D, et al. *Lancet*. 2020;396(10244):110-120.



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