

Tazarotene 0.045% Lotion for Acne: Formulation, Application Characteristics, and Clinical Efficacy and Safety

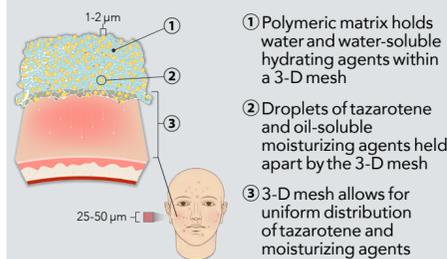
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*Ortho Dermatologics is a division of Bausch Health US, LLC

INTRODUCTION AND FORMULATION

- Tazarotene 0.045% lotion was developed using polymeric emulsion technology to provide uniform and rapid distribution of the active ingredient and hydrating excipients at the skin surface and to efficiently deliver tazarotene into skin¹
- Tolerability may be improved by the vehicle design and the homogenous nature of the delivery as well as the lower dose of tazarotene used compared with all other tazarotene formulations²

Polymeric Emulsion Technology for Tazarotene 0.045% Lotion



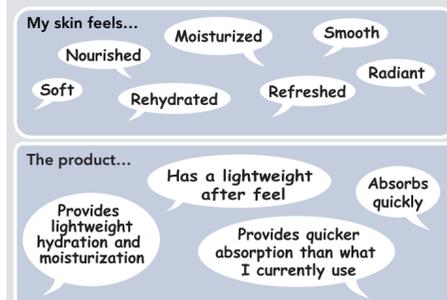
PATIENT PREFERENCE

TANGHETTI EA, ET AL. *J DERMATOL TREAT.* 2019;1-8.

- Healthy female participants aged 35–65 years (N=15) answered a questionnaire on the properties of the vehicle lotion for tazarotene 0.045%

Results

- Most participants (93–100%) responded favorably (strongly agree or agree) to all questions about the various attributes of the vehicle lotion after application



SPREADABILITY:

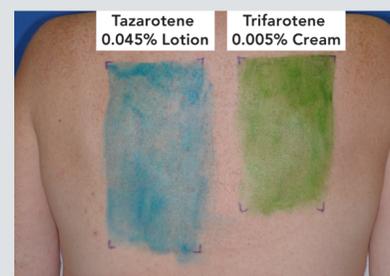
TAZAROTENE 0.045% LOTION VS TRIFAROTENE 0.005% CREAM

- Skin coverage with tazarotene 0.045% lotion was compared to trifarotene 0.005% cream in a double-blind split-body study of 30 healthy adults (aged 18–59 years)
- Each product (0.1 mL) was applied to a 10 cm wide area on one side of participants' backs until it would no longer spread; area of spread was then determined

Results

- The average area of spread for tazarotene 0.045% lotion and trifarotene 0.005% cream was 167.0 and 130.3 cm², respectively (difference = 36.7 cm²; P<0.001)

Participant Example



CORNEOMETRY AND TRANSEPIDERMAL WATER LOSS (TEWL)

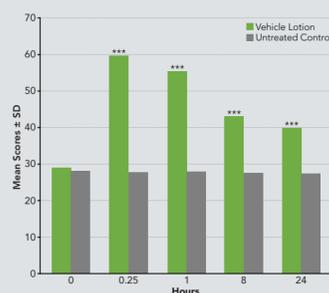
TANGHETTI EA, ET AL. *J DERMATOL TREAT.* 2019;1-8.

- Skin hydration and epidermal barrier maintenance with the vehicle lotion were assessed through corneometry and TEWL (N=30)

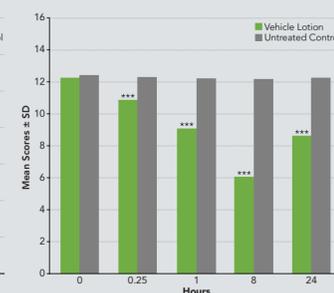
Results

- The vehicle lotion provided rapid and sustained increases in skin moisturization (left) and improved barrier function (right)

Skin Moisturization Assessment Using Corneometry (N=30)



Skin Barrier Assessment Using TEWL (N=30)



***P<0.001 vs untreated control. SD, standard deviation.

SKIN DEPOSITION:

TAZAROTENE 0.045% LOTION VS TAZAROTENE 0.1% CREAM

DRAELOS ZD AND DRAELOS MM. *J DRUGS DERMATOL.* 2021; IN PRESS.



~1 g of each product (blue and green) applied to square areas on each forearm

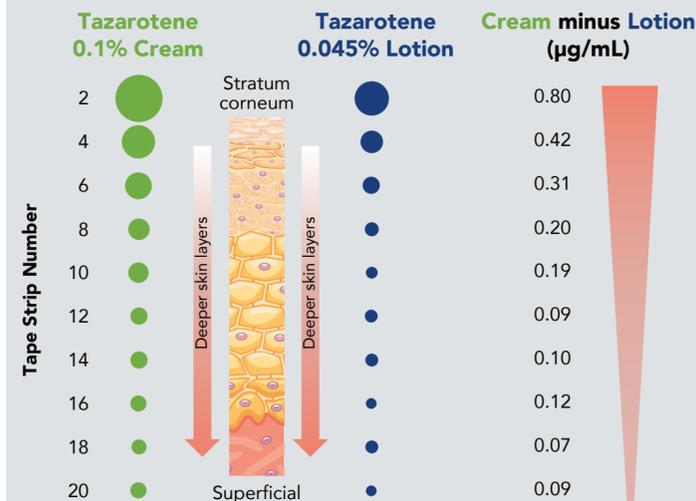
Post-application: tape strips applied and held for 10 sec using a controlled pressure plunger

Tape strips removed. First strip discarded; 20 additional strips taken at same sampling location (frozen until analysis)

Even-numbered tape strips processed and analyzed for tazarotene using LC-MS

Results

- 10 female White participants aged 19–59 years completed the study
- At 6 hours post application, most tazarotene remained on the skin surface, as indicated by the higher tazarotene concentrations recovered from superficial (tape strip 2) versus deeper skin layers (tape strip 20)
- Concentration of tazarotene was approximately 2-fold higher for 0.1% cream vs 0.045% lotion at both superficial and deep skin layers, but the absolute difference drastically decreased in deeper layers



- Higher tazarotene concentrations remained at superficial vs deeper layers
- Difference in concentration between formulations drastically decreased in deeper layers

Dot area corresponds to tazarotene concentration. Skin layers shown for illustrative purposes only. Exact location of tape strip sampling within the skin is unknown. LC-MS, liquid chromatography-mass spectrometry.

PHASE 2 STUDY:

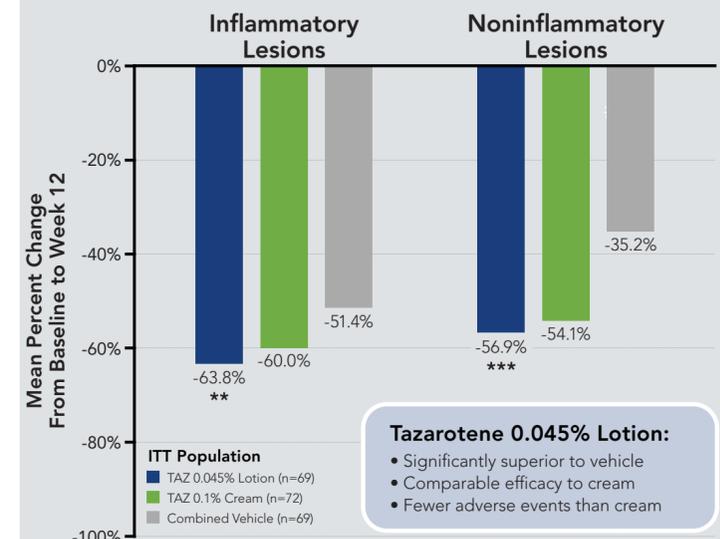
TAZAROTENE 0.045% LOTION, TAZAROTENE 0.1% CREAM, AND VEHICLE

TANGHETTI EA, ET AL. *J DRUGS DERMATOL.* 2019;18(6):542–548.

- A total of 210 participants aged ≥12 years with moderate-to-severe acne (Evaluator's Global Severity Score [EGSS] of 3 or 4) were randomized (2:2:1:1) to receive once-daily tazarotene 0.045% lotion, tazarotene 0.1% cream, lotion vehicle, or cream vehicle for 12 weeks

Results

- Tazarotene 0.045% lotion demonstrated significantly greater mean percent reductions in inflammatory and noninflammatory lesion counts vs vehicle at week 12
- Rates of treatment-emergent adverse events (TEAEs), serious adverse events, and treatment-related TEAEs were lower with tazarotene 0.045% lotion compared with tazarotene 0.1% cream

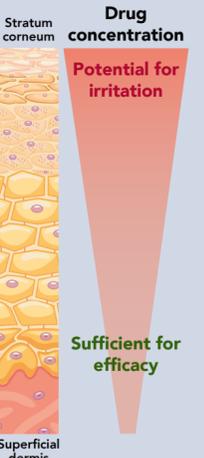


TEAE Summary, Safety Population	TAZ 0.045% Lotion (n=68)	TAZ 0.1% Cream (n=71)	Combined Vehicle (n=67)
Any TEAE	14.7%	26.8%	13.4%
Any SAE	0%	0%	0%
Any TEAE related to treatment	2.9%	5.6%	0%

P<0.01, *P<0.001 vs combined vehicle. Statistical comparison between TAZ 0.1% cream and combined vehicle was not conducted. At week 12, a greater percentage of tazarotene 0.045%-treated participants achieved treatment success versus combined vehicle (18.8% vs 10.1%), though this difference did not reach statistical significance. ITT, intent to treat; SAE, serious adverse event; TAZ, tazarotene; TEAE, treatment-emergent adverse event.

CONCLUSIONS

- Tazarotene 0.045% lotion utilizes polymeric emulsion technology to enhance hydration, moisturization, and skin barrier function
- This easy-to-apply lotion, with sensory and aesthetic properties preferred by patients, appears to have greater skin coverage compared with trifarotene cream
- There is superior tolerability of tazarotene 0.045% lotion versus tazarotene 0.1% cream, with similar clinical efficacy
- Tazarotene is a potent activator of retinoic acid gamma receptors (enriched throughout skin^{3,4}); thus, lower levels in deeper skin with tazarotene 0.045% lotion vs 0.1% cream are sufficient for clinical effect
- Superior tolerability of tazarotene 0.045% lotion vs 0.1% cream may be due to lower drug concentration at superficial epidermal layers
- Tazarotene 0.045% lotion is a beneficial treatment option for acne in patients aged 9 and older, delivered in an easy-to-spread formulation that can be applied to the face, back, and chest



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AUTHOR DISCLOSURES

Zoe Draelos received funding from Ortho Dermatologics to conduct the research presented here. Emil Tanghetti has served as speaker for Novartis, Ortho Dermatologics, Sun Pharma, Lilly, Galderma, AbbVie, and Dermira, served as a consultant/clinical studies for Hologic, Ortho Dermatologics, and Galderma, and is a stockholder for Accure. Linda Stein Gold has served as investigator/consultant or speaker for Ortho Dermatologics, LEO Pharma, Dermavant, Incyte, Novartis, AbbVie, Pfizer, Sun Pharma, USCB, Accutis, Sun Pharma, Hilary Baldwin has served as advisor, investigator, and on speakers' bureaus for Almirall, Cassiopea, Foamix, Galderma, Ortho Dermatologics, SolGel, and Sun Pharma. Leon Kircik has acted as an investigator, advisor, speaker, and consultant for Ortho Dermatologics. Eric Guenin is an employee of Ortho Dermatologics and may hold stock and/or stock options in its parent company.