

*Illuminating Science.
Empowering Patients.*

COMPANY OVERVIEW

Dr. Neal Walker
President and CEO

January 2017



Disclaimer

This presentation contains forward-looking statements, including statements regarding the treatment and market opportunity for SK, common warts, alopecia areata, androgenetic alopecia, vitiligo, and the future operations of Aclaris. These statements involve substantial known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to be materially different from the information expressed or implied by these forward-looking statements. We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements we make. The forward-looking statements in this presentation represent our views as of the date of this presentation. For further information regarding these risks, uncertainties and other factors you should read Aclaris' Annual Report on Form 10-K for the year ended December 31, 2015, Aclaris' Quarterly Report on Form 10-Q for the quarter ended September 30, 2016 and Aclaris' other filings it makes with the Securities and Exchange Commission from time to time. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements at some point in the future, we have no current intention of doing so except to the extent required by applicable law. You should, therefore, not rely on these forward-looking statements as representing our views as of any date subsequent to the date of this presentation.

This presentation also contains estimates and other statistical data made by independent parties and by us relating to market size and other data about our industry. This data involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. In addition, projections, assumptions and estimates of our future performance and the future performance of the markets in which we operate are necessarily subject to a high degree of uncertainty and risk.

Our Corporate Strategy: Building a Fully-integrated Dermatology Company

APPLY UNIQUE LEADERSHIP INSIGHTS

- Founded and sold several companies
- Directly relevant experience in Dermatology
- Board-certified dermatologists as CEO and CSO
- Key leadership with track record developing and commercializing innovative treatments

ACCELERATE NOVEL, DIVERSE PIPELINE

A-101: Proprietary formulation of high concentration H_2O_2

- Seborrheic Keratosis
 - NDA submission 1Q 2017
 - MAA submission mid-2017

- Common Warts
 - Positive phase 2 results

ATI-50001/ATI-50002: JAK 1/3 Inhibitors

- Alopecia Areata
 - Oral Phase 1 PK/PD initiated
 - Topical IND 2Q 2017

- Vitiligo

ATI-50003: JAK 3 Inhibitor

- Androgenetic Alopecia (AGA)
 - Topical formulation

ASSET AND COMMERCIAL STRATEGY

- Time and capital efficient
- Fill need in market for high touch dermatology company
- Offer physicians opportunity to expand practice with new self-pay aesthetic treatments
- Focus on large, underserved market segments in dermatology with no FDA-approved drugs and/or significant treatment gaps



Markets Poised for Continued Growth: Self-Pay Aesthetic and Medical Dermatology

Global dermatology market valued at **\$20 Billion** in 2015,
growing at CAGR of 7.7%¹...

Global aesthetic market expected to reach **\$12.6 Billion** by 2020,
growing at CAGR of 10.8%²...

...and non-surgical procedures increased by 605% from 1997-2015³

The Washington Post

“The types of procedures being performed is changing. Most of the growth has been in minimally invasive cosmetic procedures.”
- *The Washington Post*, March 2, 2016

¹ Global Dermatology Market to 2022 GBI Research. <http://www.gbiresearch.com/report-store/market-reports/therapy-analysis/global-dermatology-market-to-2022-innovative-pipeline-and-increasing-uptake-of-biologics-to-diversify-treatment-options-and-d>. Last accessed September 29, 2016.

² Medical Aesthetics Market Report. MarketsandMarkets, 2015. <http://www.marketsandmarkets.com/PressReleases/medical-aesthetics.asp>. Accessed August 31, 2016.

³ 2015 ASAPS Statistics: Complete Charts. American Society for Aesthetic Plastic Surgery. <http://www.surgery.org/sites/default/files/ASAPS-Stats2015.pdf>. Last accessed August 31, 2016.

Focus on Significant Treatment Gaps

OUR MISSION:

To identify, develop and commercialize novel therapies for undertreated skin and hair conditions that impact patients



**SEBORRHEIC
KERATOSIS**



**VERRUCA VULGARIS
(Common Warts)**



ALOPECIA AREATA



VITILIGO



**ANDROGENETIC ALOPECIA
(Male/Female Pattern Hair Loss)**

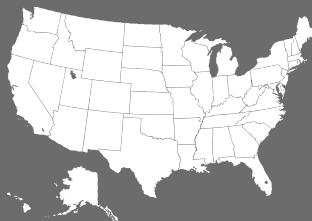


Focus on Underserved Conditions

SEBORRHEIC KERATOSIS (SK)

83.8MM people

in U.S.¹; current treatments
invasive and painful²,
no FDA-approved treatments



COMMON WARTS (VERRUCA VULGARIS)

22+MM people

in U.S.³; current treatments show only modest
therapeutic effect and have significant
limitations^{4,5}



ALOPECIA AREATA (AA)

6.8+MM people

in U.S. have had or will develop AA⁶, current available Rx
treatment options used off label and have significant limitations



PATTERN HAIR LOSS (ANDROGENETIC ALOPECIA)

35MM men and 21MM women

in U.S. suffered from hair loss in 2012⁷,
demand for treatment high



VITILIGO



1-2% overall global

population impacted⁸, no FDA-approved drug to
repigment the skin⁹

¹ Bickers et al, The Burden of Skin Disease, J Am Acad Dermatol, 2006;55:490-500.

² Jackson et al, Current Understanding of Seborrheic Keratosis: Prevalence, Etiology, Clinical Presentation, Diagnosis, and Management, *Journal of Drugs in Dermatology*; 14:10, 2015; 1119-1125.

³ Nguyen et al, Laser Treatment of Nongenital Verrucae A Systematic Review, JAMA Dermatol. 2016;152(9):1025-1033.

⁴ Kwok et al, Topical treatments for cutaneous warts (Review), *Cochrane Database of Systematic Reviews*, 9, 2012; Art. No.: CD001781.

⁵ Mulhem et al, Treatment of Nongenital Cutaneous Warts, *American Family Physician*; 84:3, 2011; 288-293.

⁶ National Alopecia Areata Foundation, <https://www.naaf.org/alopecia-areata>. Last accessed August 24, 2016.

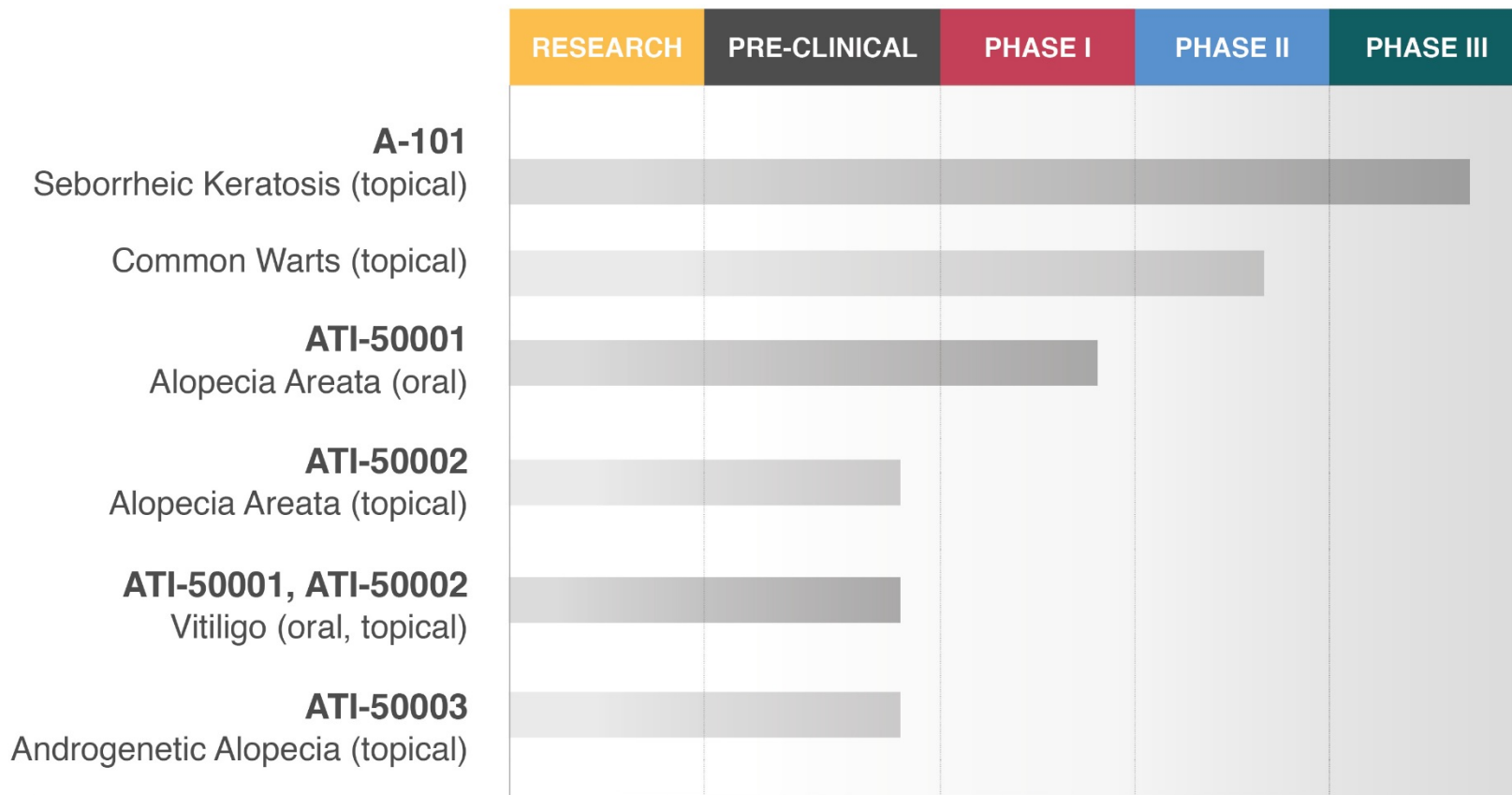
⁷ Bergeson, L. The Truth About Hair Loss and Baldness Cures. 11.08.2014.

⁸ Fitzpatrick T., et al. Vitiligo Facts. American Vitiligo Research Foundation Inc.

⁹ ASDReports. The Vitiligo Therapeutics Market is Expected to Show Moderate Growth up to 2019. 08.22.2012.

Aclaris Drug Pipeline – Focused on Potential “Firsts” in Dermatology to Address Significant Unmet Needs

Exclusive, Worldwide Right to Commercialize A-101, ATI-50001, ATI-50002 and ATI-50003



A-101
LEAD CANDIDATE
FOR SEBORRHEIC
KERATOSIS



Favorable Market Dynamics for a New Seborrheic Keratosis (SK) Topical Treatment

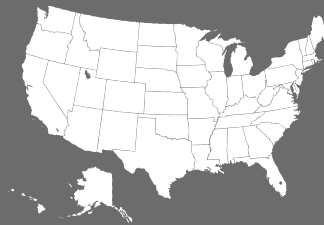
About SKs:

- Most common benign skin lesion
- Prevalent in all skin types
- ~5K dermatologists most active in treating SK
- No FDA-approved topical treatment for SK

SEBORRHEIC KERATOSIS (SK)

83.8MM people

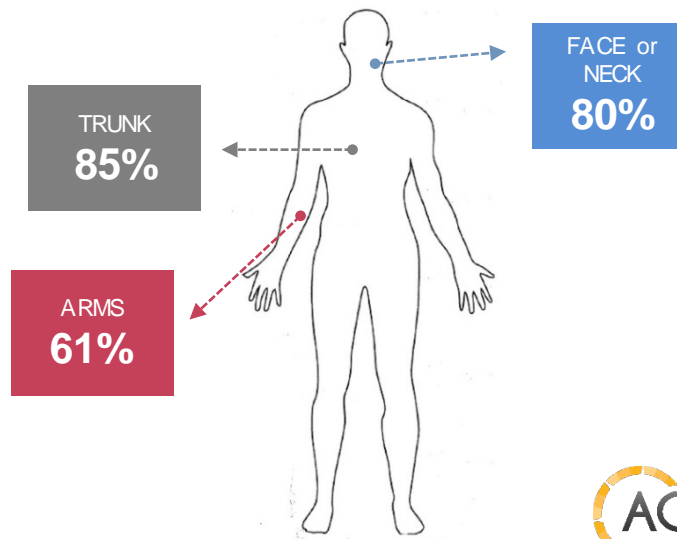
in U.S.¹; 8.3 million SK treatments by dermatologists annually²



Self-Pay Aesthetic Treatments:

- Number of minimally invasive aesthetic procedures up six-fold from 1997-2015³

SK Distribution³ % of Patients who Have SKs on the:



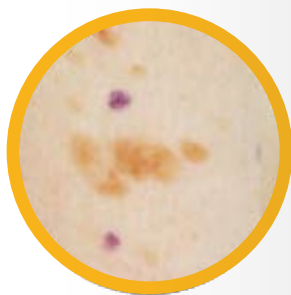
¹ Bickers et al, The Burden of Skin Disease, J Am Acad Dermatol, 2006;55:490-500.

² Data on File: Aclaris Therapeutics Burke Screener of 594 dermatologists– 2014

³ 2015 ASAPS Statistics: Complete Charts. American Society for Aesthetic Plastic Surgery.

<http://www.surgery.org/sites/default/files/ASAPS-Stats2015.pdf>. Last accessed August 31, 2016.

Significant Unmet Need in SK Treatment



SK Before Treatment with Cryosurgery



3 Months Post Cryosurgery Treatment

CURRENT TREATMENT OPTIONS ARE OFTEN INVASIVE AND PAINFUL...¹

- No FDA-approved drug treatments
- Around two-thirds of SK treatments are performed through cryosurgery
- Other less common treatments include:
 - Curettage
 - Electrodesiccation
 - Excision, usually shave



...AND HAVE SIGNIFICANT LIMITATIONS...¹

- May cause scarring
- May cause dyspigmentation (hypo or hyper)
- Treatment of numerous SK lesions impractical
- May require local anesthesia
- May not be effective in treating thicker lesions

¹ Jackson et al, Current Understanding of Seborrheic Keratosis: Prevalence, Etiology, Clinical Presentation, Diagnosis, and Management, *Journal of Drugs in Dermatology*; 14:10, 2015; 1119-1125

A-101: Potential to Be First FDA-approved Drug for SK

A-101 is an investigational new drug in development for the topical, in-office treatment of SK

A-101 IS AN APPEALING CONCEPT FOR SK TREATMENT

- Topical, non-invasive
- Minimal discomfort; no need for anesthesia
- Reduced risk of pigmentary changes and scarring
- Can treat larger numbers of lesions
- Ability to hand off to ancillary staff

BACKGROUND

- Proprietary formulation of 40% H₂O₂
- MOA: Drives apoptotic and necrotic cell death



A-101 40% Topical Solution

Phase 3 Studies
Top-Line Results





A-101 40% Topical Solution Phase 3 Pivotal Trials SEBK-301 and SEBK-302

Trial Design

- Two identical multi-center, randomized double-blind, placebo-controlled trials conducted in the U.S., which enrolled a total of 937 patients
- Assessed safety, efficacy, and tolerability of A-101 40% topical solution versus placebo
- Patients were 18 years and older, and received up to two treatments on four target lesions, 21 days apart

Primary Endpoint

- Primary efficacy endpoint was the percentage of patients with clearance (PLA=0) of all four target lesions at 106 days after first treatment

Secondary and Other Endpoints

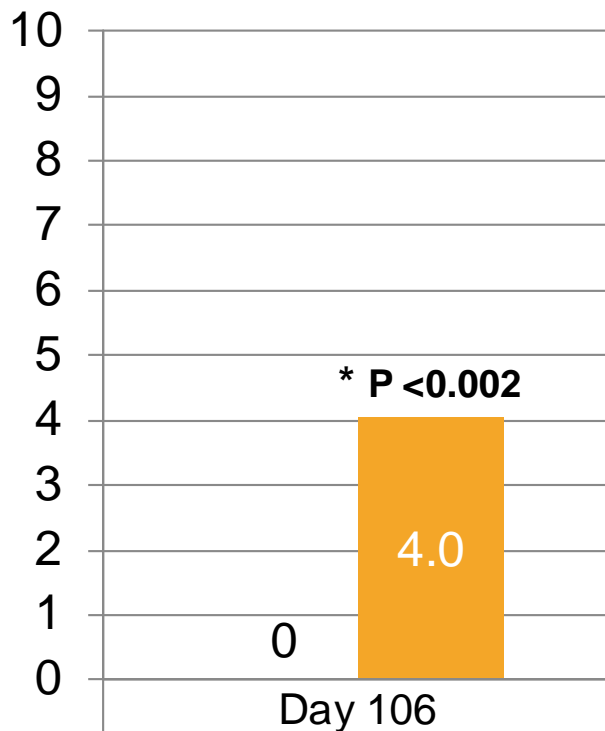
- Secondary efficacy endpoint was the percentage of patients with clearance (PLA=0) in at least three of the four target lesions
- Mean per-patient percentage of target lesions judged to be clear/near-clear ($PLA \leq 1$)
- Percentage of all target lesions of the face judged to be clear/near-clear ($PLA \leq 1$)

Safety

- Safety – assessed adverse events, local skin reactions, vitals and clinically-relevant abnormal lab results

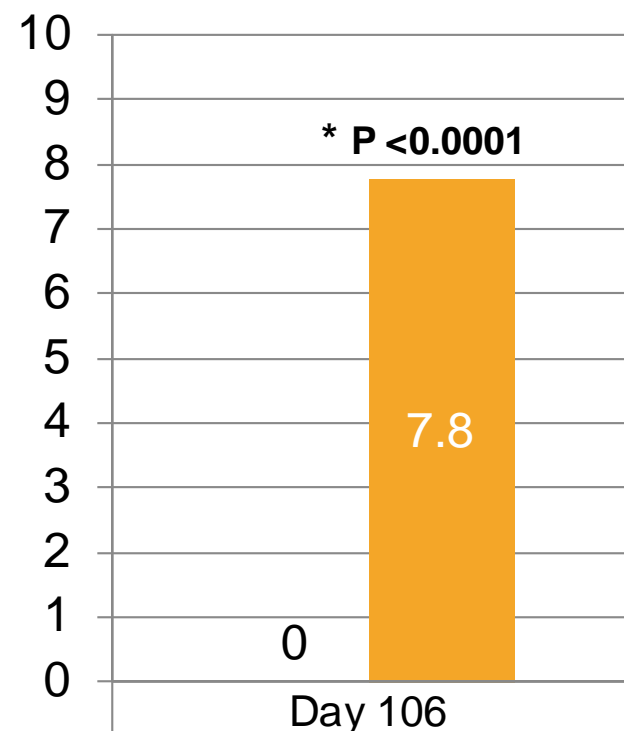
Primary Endpoint: Responder Analysis - Percentage of Patients Achieving Clearance of All 4 Target SK Lesions (PLA=0)

Study A-101-SEBK-301



■ Vehicle	0
■ A-101 40%	4.0

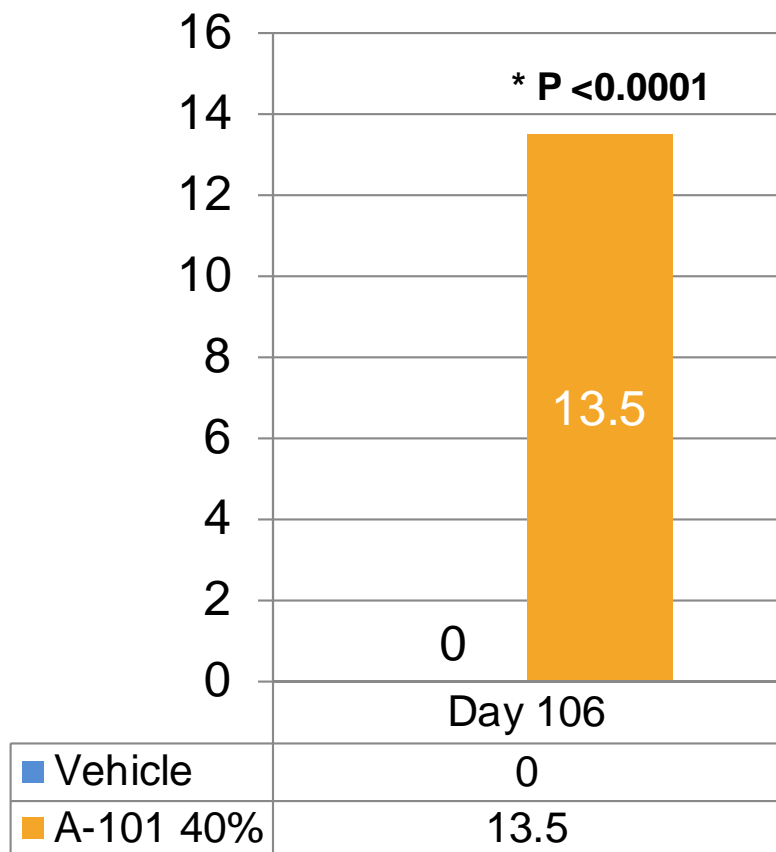
Study A-101-SEBK-302



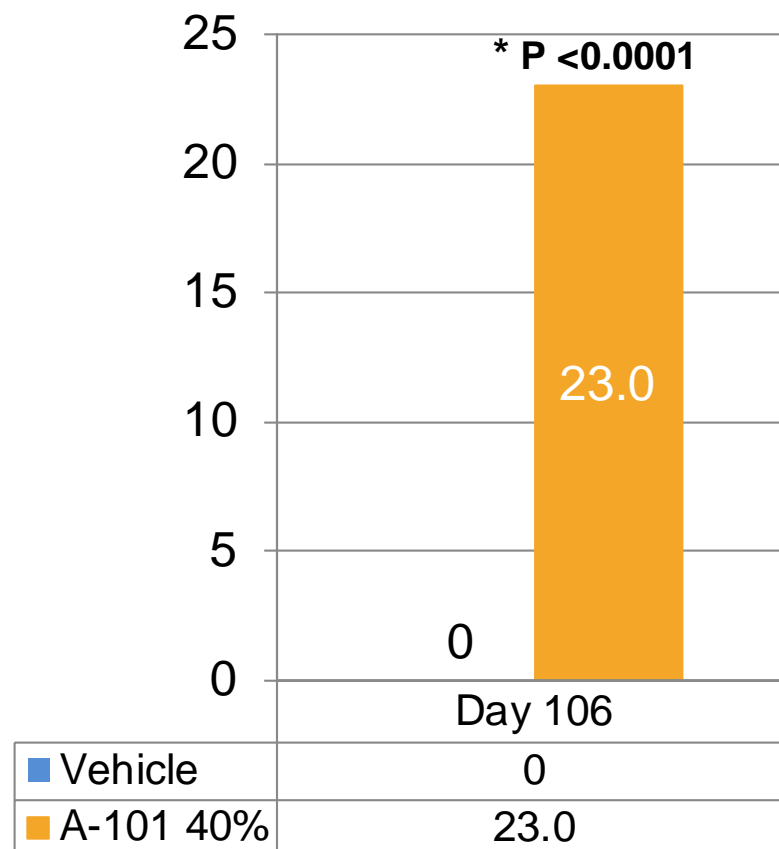
■ Vehicle	0
■ A-101 40%	7.8

Secondary Endpoint**: Responder Analysis - Percentage of Patients Achieving Clearance of at Least 3 of 4 Target SK Lesions (PLA=0)

Study A-101-SEBK-301



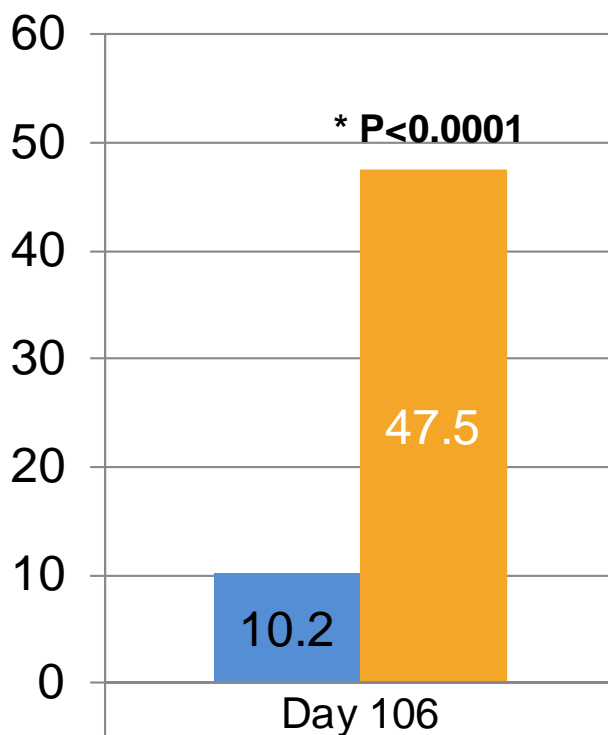
Study A-101-SEBK-302



**European Primary Regulatory Endpoint

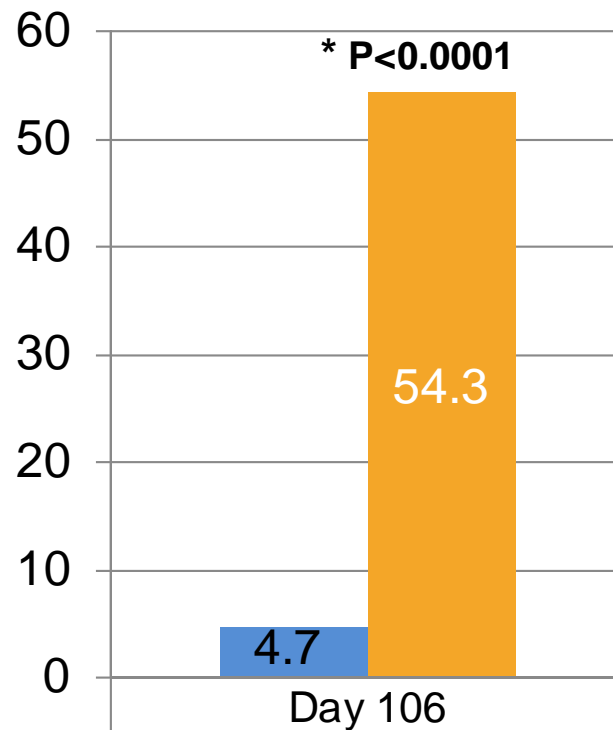
Mean Per-Patient Percentage of Target Lesions Judged to be Clear/Near-Clear ($PLA_{\leq 1}$)

Study A-101-SEBK-301



■ Vehicle	10.2
■ A-101 40%	47.5

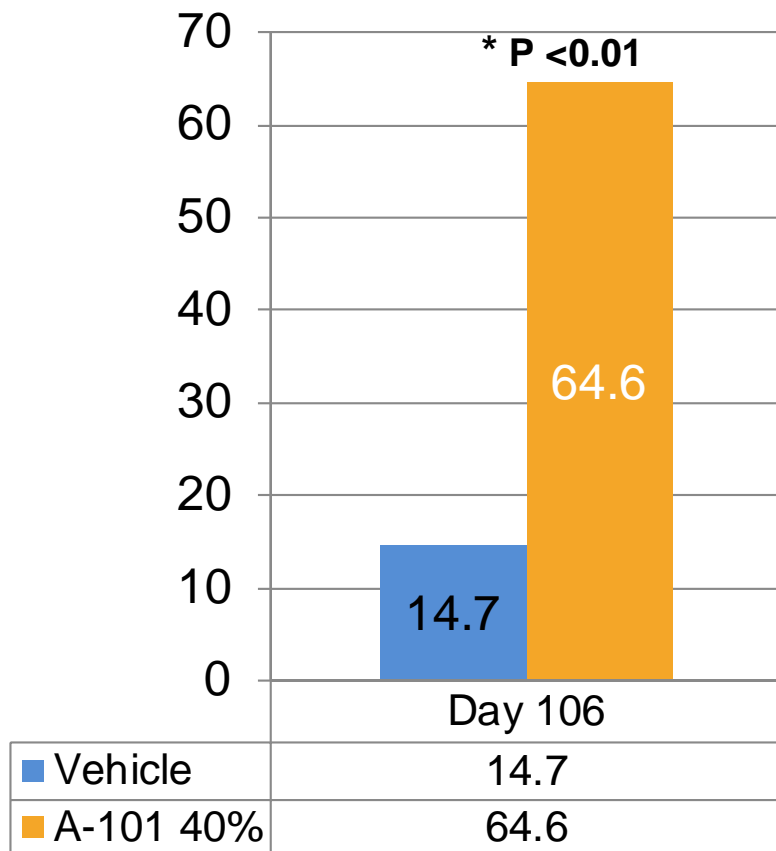
Study A-101-SEBK-302



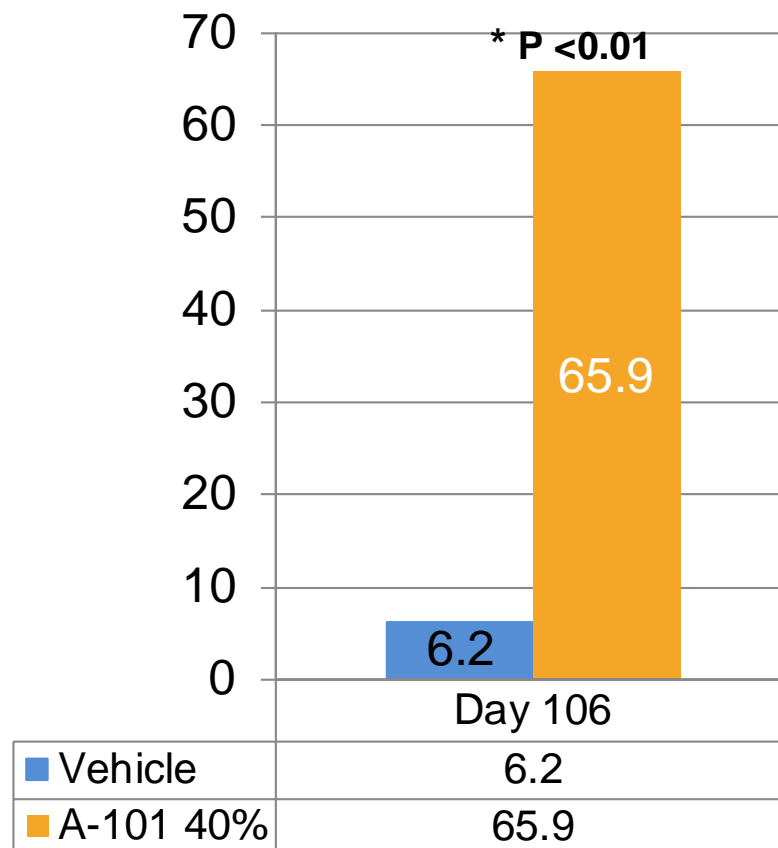
■ Vehicle	4.7
■ A-101 40%	54.3

Percentage of All Target Lesions of the Face Judged to be Clear/Near-Clear ($PLA_{\leq 1}$)

Study A-101-SEBK-301



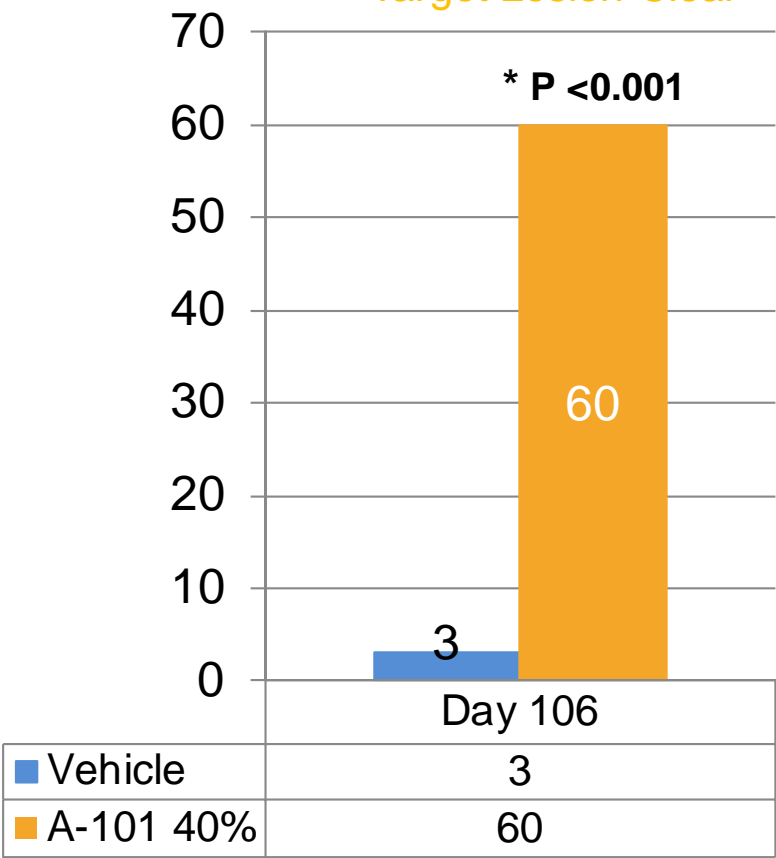
Study A-101-SEBK-302



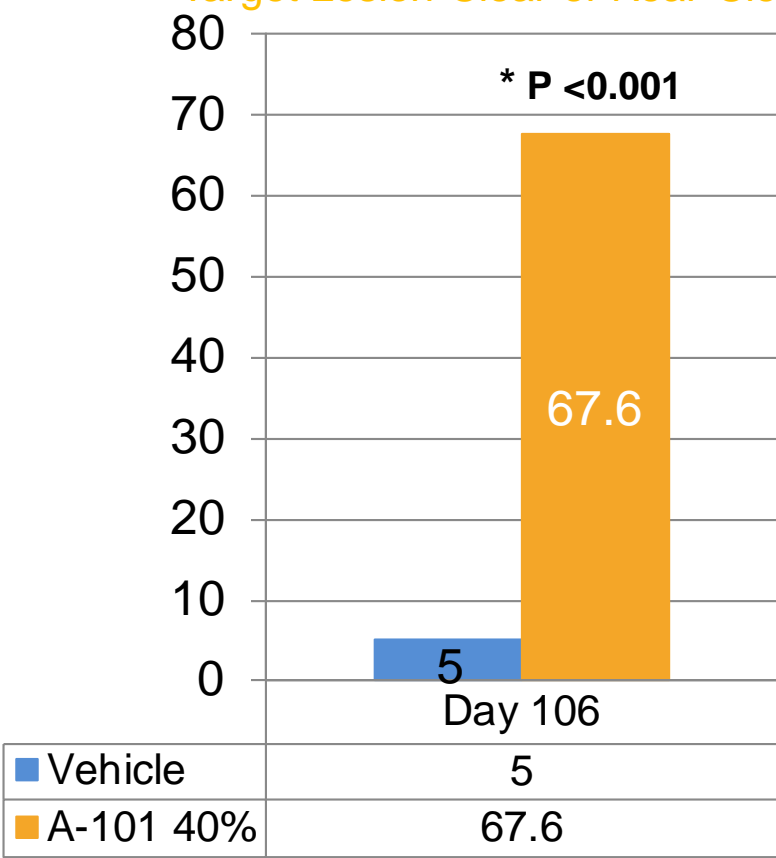
Phase 2 SEBK-203 Face Study: Percentage of All Target Lesions of the Face Judged to be Clear (PLA=0) and Clear/Near-Clear (PLA≤1)

PLA Responder Analysis

Percentage of Subjects with Target Lesion Clear



Percentage of Subjects with Target Lesion Clear or Near Clear

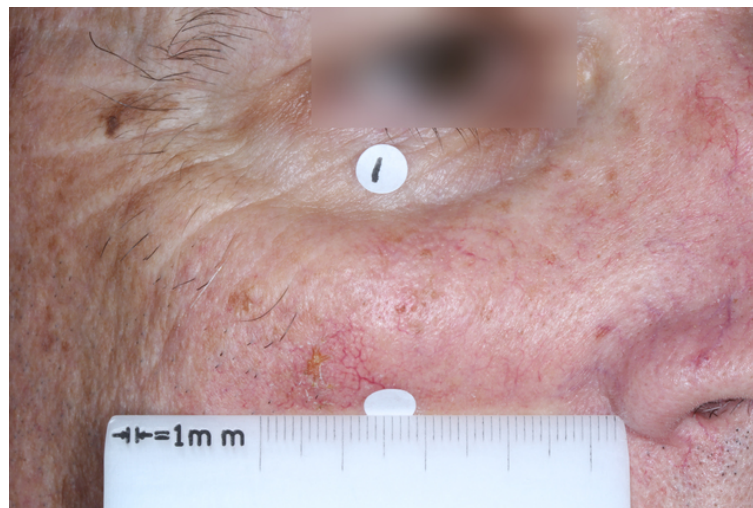


Phase 3 Patient Photos: PLA 3 to PLA 0 (Clear)

Male

Skin Type:
3

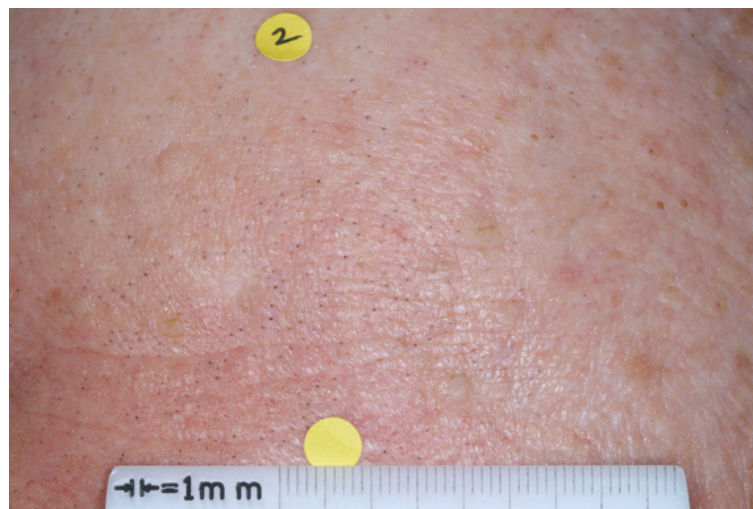
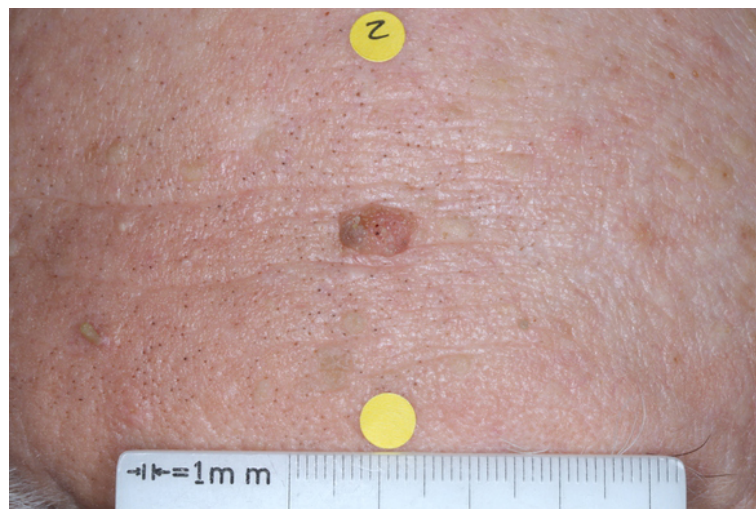
Location:
Face



Male

Skin Type:
3

Location:
Face



Pre-Treatment with A-101

Final Visit f/u

Phase 3 Patient Photos: PLA 3 to PLA 0 (Clear)

Male

Skin Type:
2

Location:
Face



Male

Skin Type:
3

Location:
Face



Pre-Treatment with A-101

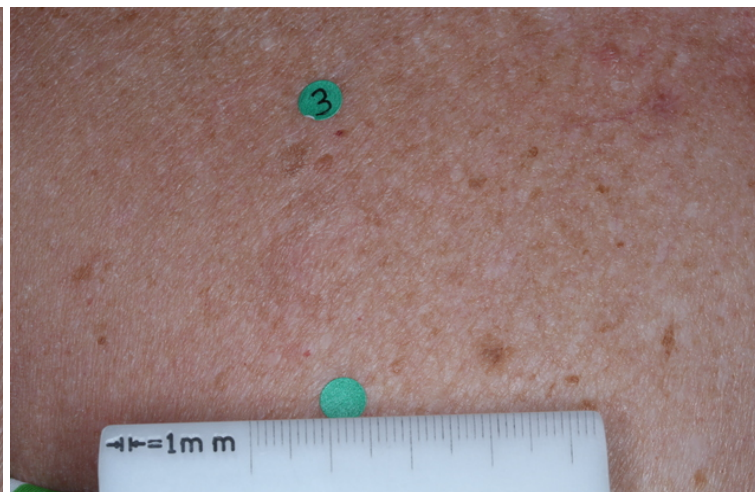
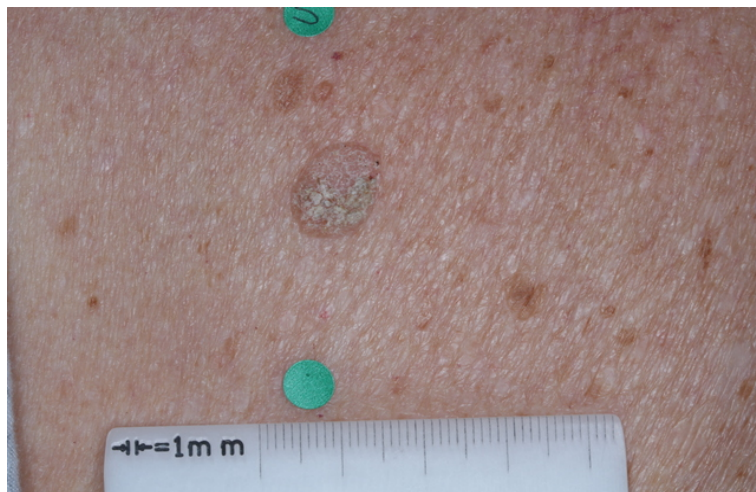
Final Visit f/u

Phase 3 Patient Photos: PLA 1 (Near Clear)

Female

Skin Type:
2

Location:
Back



Female

Skin Type:
2

Location:
Back



Pre-Treatment with A-101

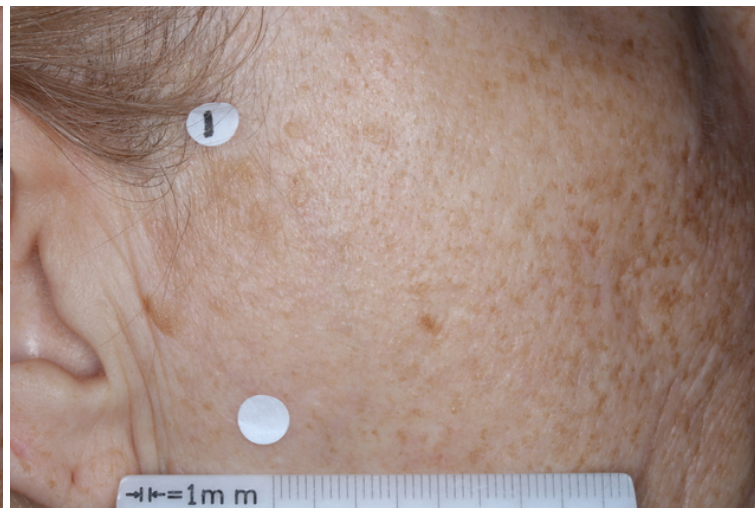
Final Visit f/u

Phase 3 Patient Photos: PLA 1 (Near Clear)

Female

Skin Type:
2

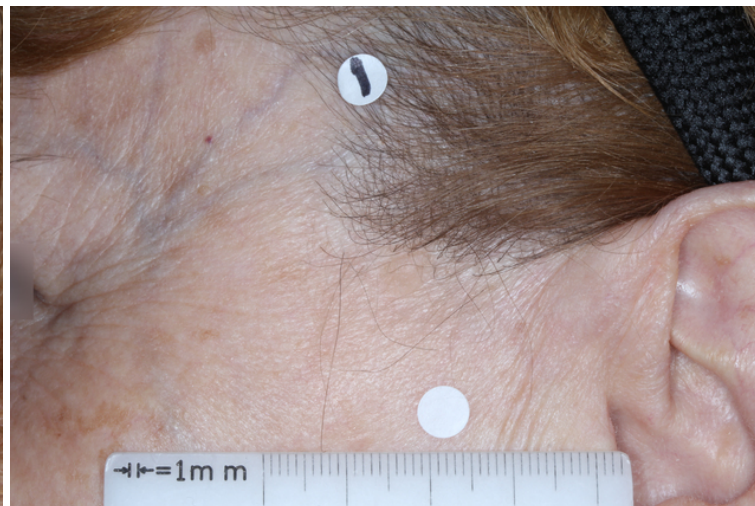
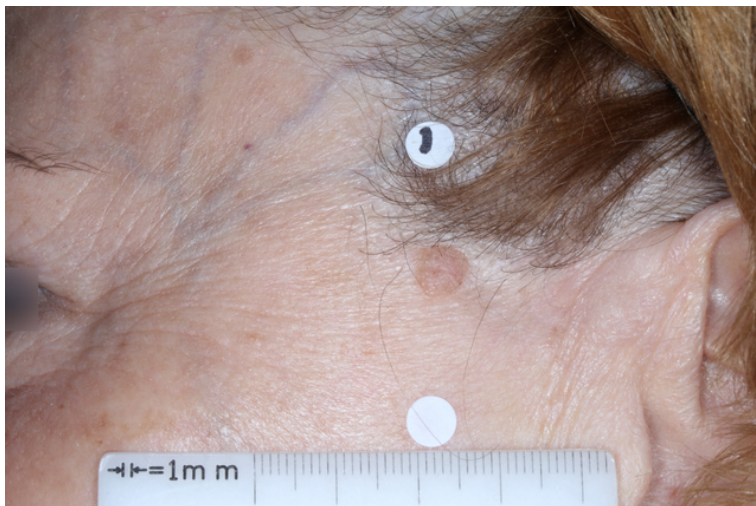
Location:
Face



Female

Skin Type:
2

Location:
Face



Pre-Treatment with A-101

Final Visit f/u

Phase 3 Patient Photos: PLA 1 (Near Clear)

Pre-Treatment with A-101

Final Visit f/u

Female

Skin Type: 1

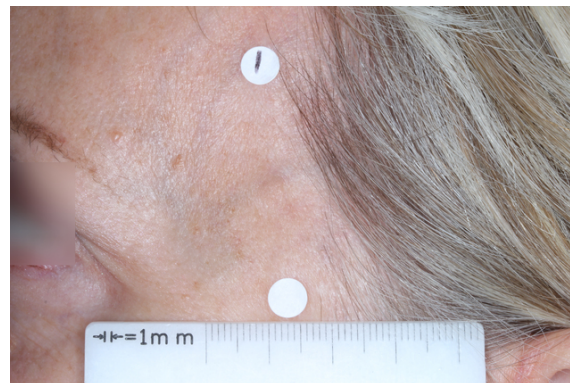
Location:
Back



Female

Skin Type: 2

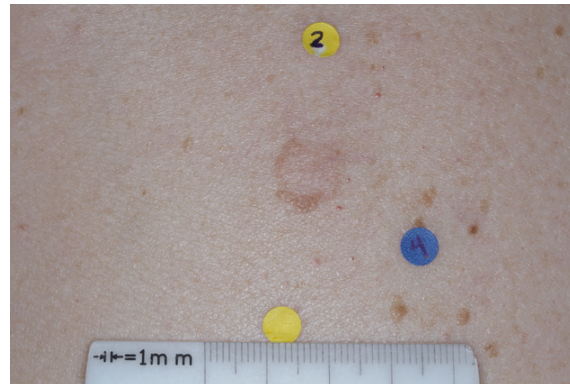
Location:
Face



Female

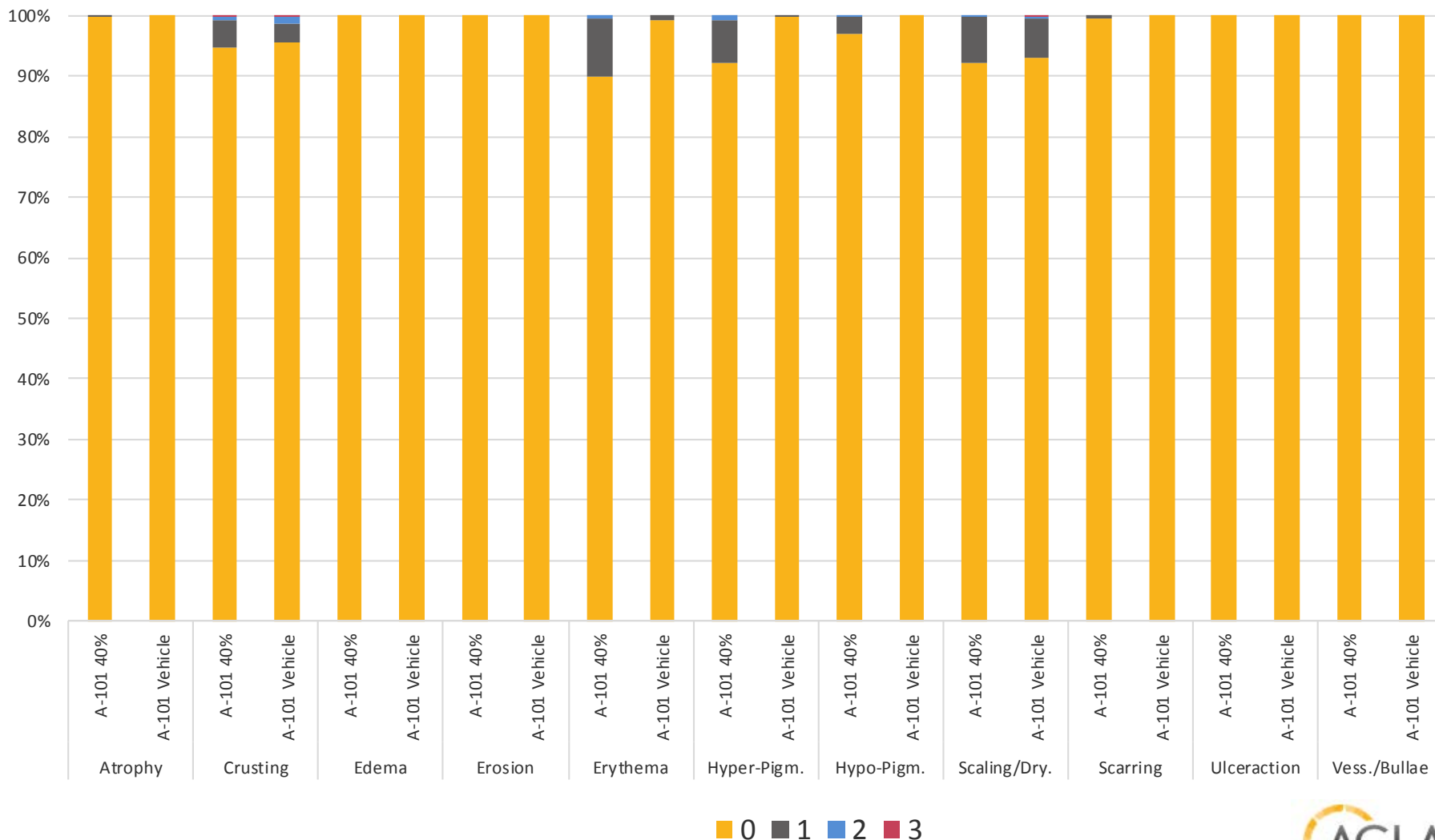
Skin Type: 3

Location:
Back



Study A-101-SEBK-301+2: Local Skin Reactions at Last Visit

0 = No Reaction 1 = Mild 2 = Moderate 3 = Severe





A-101 Strategy

Buy and Bill Model

- Self-pay, minimally invasive procedure
- Lower cost relative to other aesthetic treatments (Botox®, fillers, laser treatments)

Concentrated Prescriber Base

- 5,000 U.S. dermatologists account for 70+% of procedures for SK
- Concentrated call point allows for high reach and frequency

Disease Awareness

- Campaign to create awareness among physicians
- KOL engagement, conference presentations and publications

Commercial Launch

- 50-60-person specialty sales team focused on high-tier targets
- Comprehensive promotional campaign to include peer-influence programs

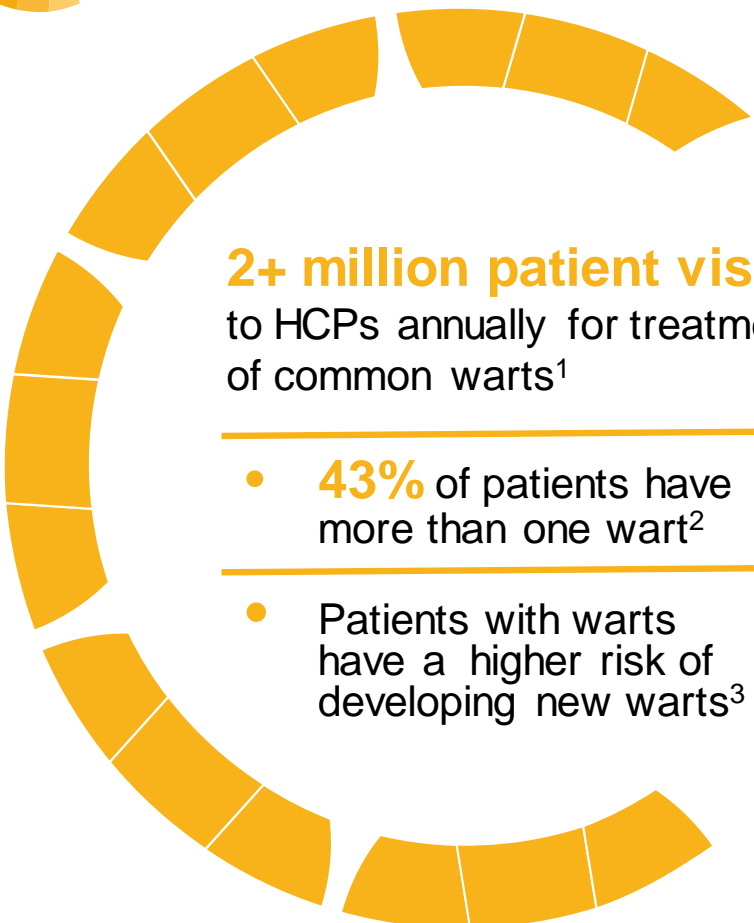
Patient Engagement

- Campaigns focused on driving awareness and furthering interest in treatment options

A-101
CANDIDATE FOR
COMMON WARTS




Existing Patient Base Offers Significant Market Potential



2+ million patient visits
to HCPs annually for treatment
of common warts¹

- **43%** of patients have more than one wart²
- Patients with warts have a higher risk of developing new warts³



59% of visits
are to a
dermatologist¹



25% of visits
are to a
pediatrician¹



11% of visits are
to a **family/general
practitioner**¹

¹ IMS National Disease and Therapeutic Index 2016.

² Bruggnik et al, Natural Course of Cutaneous Warts Among Primary Schoolchildren: A Prospective Cohort Study 2013, *Annals of Family Medicine*;11:5,2013;437-441.

³ Lipke M., An Armamentarium of Wart Treatments, *Clinical Medicine & Research*,4:4, 2006; 273-293.

Patient Desire for Treatment

- Over 2 million patient visits to HCPs annually for the treatment common warts¹
- 50% of patients report discomfort²
- 39% of patients say warts impact social/leisure activities²
- Perceived social stigma,³ possibly due to contagious nature
- OTC topical treatments containing salicylic acid are first-line and most common therapy²
 - Promote exfoliation; stimulate host immunity
 - Slow to work; require frequent application for up to 12 weeks³
 - Marginally effective; 1.6 times more likely to clear treated warts than placebo⁴




¹ IMS National Disease and Therapeutic Index 2016.

² Lipke M., An Armamentarium of Wart Treatments, *Clinical Medicine & Research*, 4:4, 2006; 273–293.

³ Mulhem et al, Treatment of Nongenital Cutaneous Warts, *American Family Physician*; 84:3, 2011; 288-293.

⁴ Kwok et al, Topical treatments for cutaneous warts (Review), *Cochrane Database of Systematic Reviews*, 9, 2012; Art. No.: CD001781.



Summary of A-101 Phase 2 Wart Clinical Trial Results

Trial	Common Wart Area	Topline Data	Trial Objective and Design	Trial Outcome
WART-201 (n=98) Phase 2	Trunk and Extremities	August 2016	<ul style="list-style-type: none">• Multicenter, parallel group• One wart treated• A-101 concentrations: 40%, 45% compared to vehicle• 8 applications• Duration: 56 days	<ul style="list-style-type: none">• Efficacy: Statistically significant clearance with 45% concentration• Favorable safety profile

Primary Endpoint:

Mean change from baseline in the Physician's Wart Assessment (PWA) score at Visit 10 using an analysis of covariance

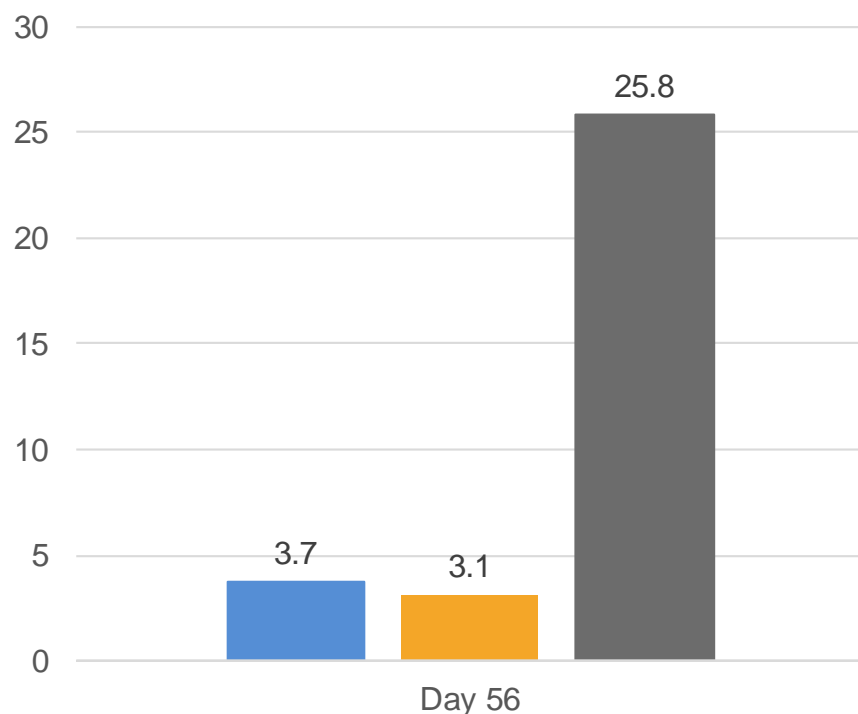
Secondary Endpoints:

- Responder analysis: The proportion of subjects whose target wart is judged to be clear on the PWA at Visit 10.
- Responder analysis: The proportion of subjects whose target wart is judged to be clear or mild on the PWA at Visit 10.
- Durability of Response analysis: For each active treatment group, the proportion of those subjects whose target wart is judged to be clear at Visit 10 who also remain clear at Visit 13 will be calculated and presented, along with the lower bound of the 95% confidence limit around each proportion.

Statistical Significance Achieved on Secondary Endpoints in Clearance of Common Warts with A-101 45% Concentration

Responder Analysis

Proportion of Subjects Achieving Wart Clearance at Visit 10



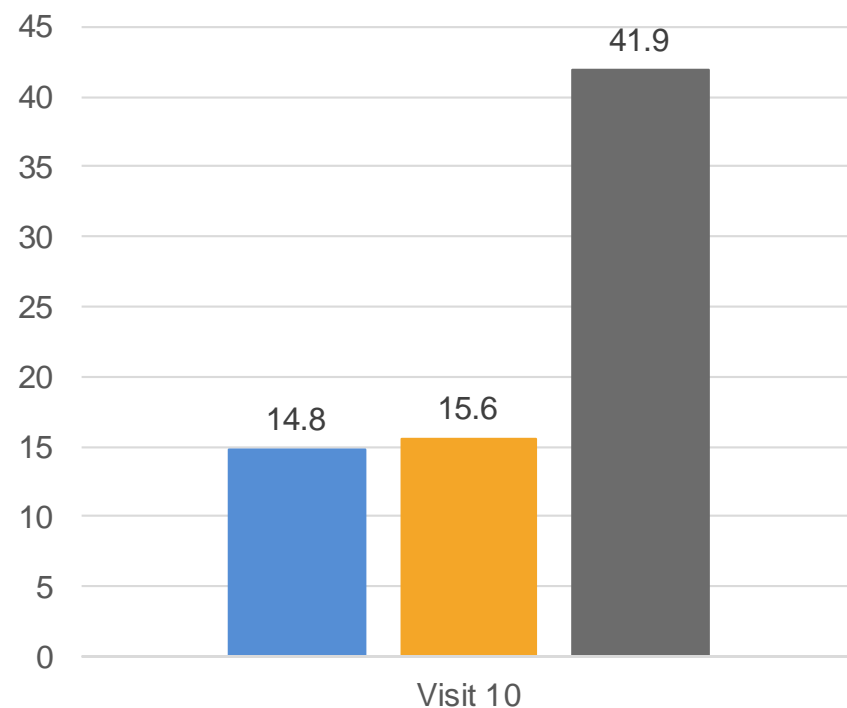
Vehicle

A-101 40.0%

A-101 45.0%

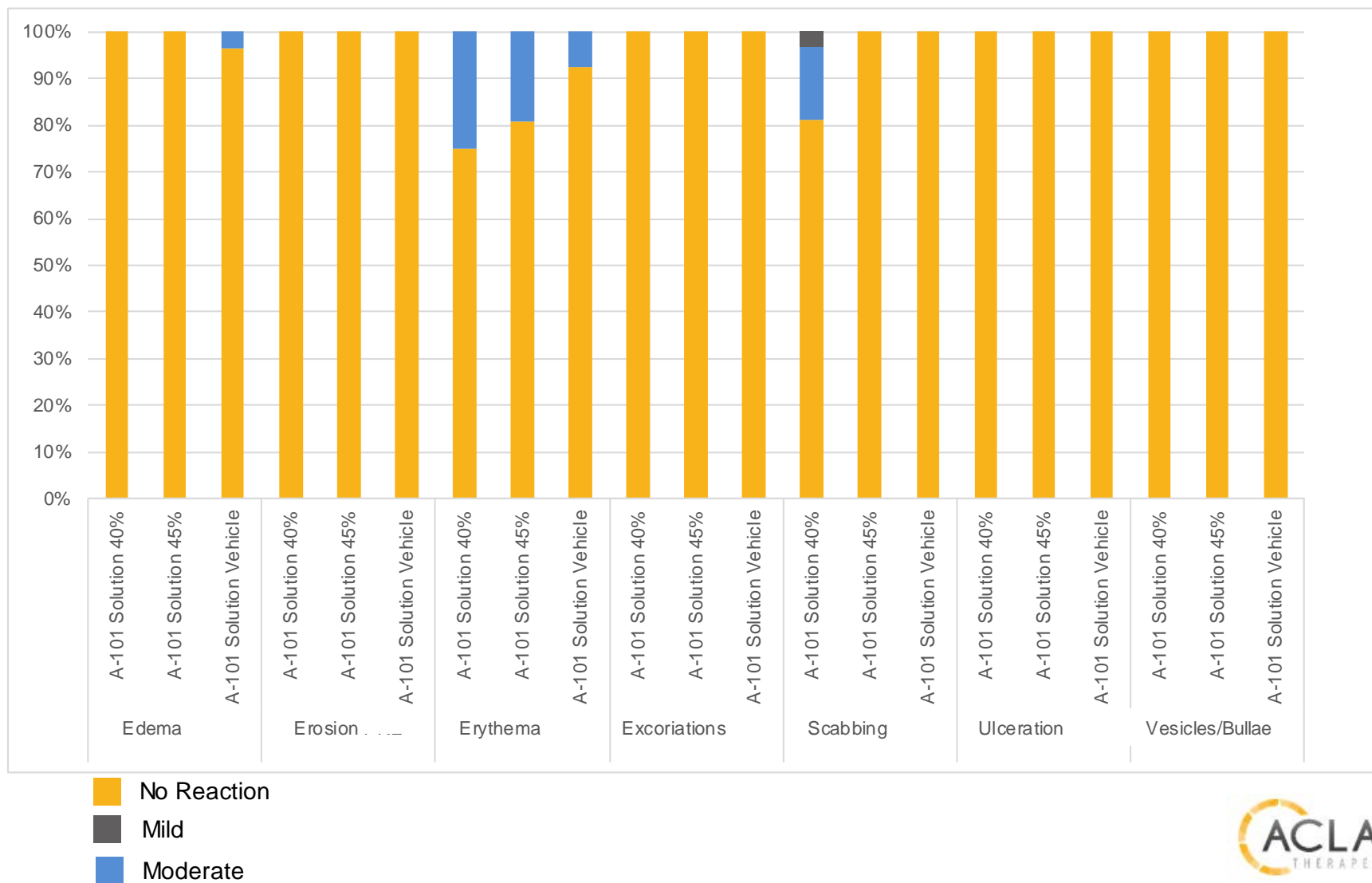
P- value = 0.02

Proportion of Subjects Achieving Clear or Barely Evident on PWA at Visit 10



P- value = 0.02

Study WART-201: Skin Reactions Similar to Vehicle at Visit 10; Favorable Safety Profile



Patient Treated with A-101 45% Concentration in Study WART-201

Pre-Treatment with A-101




Visit 2 (PWA 3)

Post-Treatment with A-101



Visit 10 (PWA 0)



Study WART-201: Based on Results, A-101 45% Concentration to be Further Developed as Treatment for Common Warts

45% Concentration of A-101 Met Phase 2 Objectives

Efficacy and Durability

- Achieved both statistical and clinical significance on the primary endpoint
- Achieved statistical significance in complete clearance of the warts
- Only 1 incidence of recurrence 3 months post-treatment

Safety Profile

- Favorable safety profile was observed under the conditions of this study
- Occasional mild, transient local skin reactions observed during treatment; skin reactions were similar to vehicle

Next Steps

- Develop A-101 45% concentration as the initial commercial dosage form for common warts
- Develop as Rx drug for patient to use at home
- Initiate Phase 2B study in which patients self-administer A-101 45%

ATI-50001/ATI-50002/ATI-50003
MULTIPLE CANDIDATES
FOR ALOPECIA AREATA



Alopecia Areata (AA)

About Alopecia Areata¹:

- 6.8+ million people in the U.S. have had or will develop AA during their lives
 - 25-50% of patients have persistent patchy AA
 - 14-25% of patients progress to alopecia totalis or universalis
- AA is an autoimmune condition characterized by patchy, non-scarring hair loss on the scalp and body
 - Alopecia Areata – patchy hair loss on scalp
 - Alopecia Totalis – complete hair loss on scalp
 - Alopecia Universalis – complete hair loss on scalp, face and body
- 2/3 of affected individuals ≤ 30 years old at disease onset
- Recent translational research work by Dr. Angela Christiano at Columbia University



AA – PATCHY



ALOPECIA UNIVERSALIS

Additional Potential Indications

Androgenetic alopecia (male/female pattern hair loss)

- AGA, a genetic disorder, is the most common cause of hair loss¹
- Experienced by 70% of men and 40% of women at some point in their lives. In 2012, 35 million men and 21 million women suffered hair loss.¹
- Sufferers are highly motivated to seek treatment.¹
- Product Candidate: Topical JAK inhibitor (ATI-50003)



Male with AGA



Female with AGA

Vitiligo

- Vitiligo is a common autoimmune disease where melanin (pigment) is absent, causing lighter patches of skin to appear on various parts of the body^{2,3}
- Vitiligo impacts 1-2% of the overall global population irrespective of sex, race or age⁴
- Disease onset occurs in about one-half of sufferers between the ages of 10 and 30⁴
- Product Candidates: Oral (ATI-50001) and topical (ATI-50002) JAK inhibitor



¹ Medscape. McElwee J., et al. Promising therapies for Treating and/or Preventing Androgenic Alopecia. Available at: <http://www.medscape.com/viewarticle/766321>. Last accessed January 6, 2017.

² Roddick, J. Autoimmune Diseases. Healthline. 07.22.2015.

³ Oakley, A. Vitiligo. DermNetNZ. 08.2015.

⁴ Fitzpatrick T., et al. Vitiligo Facts. American Vitiligo Research Foundation Inc.

ATI-50001/ATI-50002/ATI-50003: JAK Inhibitors in Alopecia Areata, Vitiligo and Androgenetic Alopecia

Portfolio and IP Estate:

ATI-50001 and ATI-50002 – Selective JAK 1/3 inhibitor

ATI-50003 – Selective Covalently Binding JAK 3 inhibitor

- Oral and topical rights
- Known MOA and biological response in humans
- Promoted hair regrowth in mouse model¹
- Broad IP estate (Columbia University and Key Organics/JAKPharm)
- Know how and methods of use covering JAK inhibitors for the treatment of:
 - Alopecia areata
 - Androgenetic alopecia (male and female pattern hair loss)
 - Additional hair loss disorders

ATI-50001

Oral treatment for alopecia totalis, alopecia universalis and vitiligo

ATI-50002

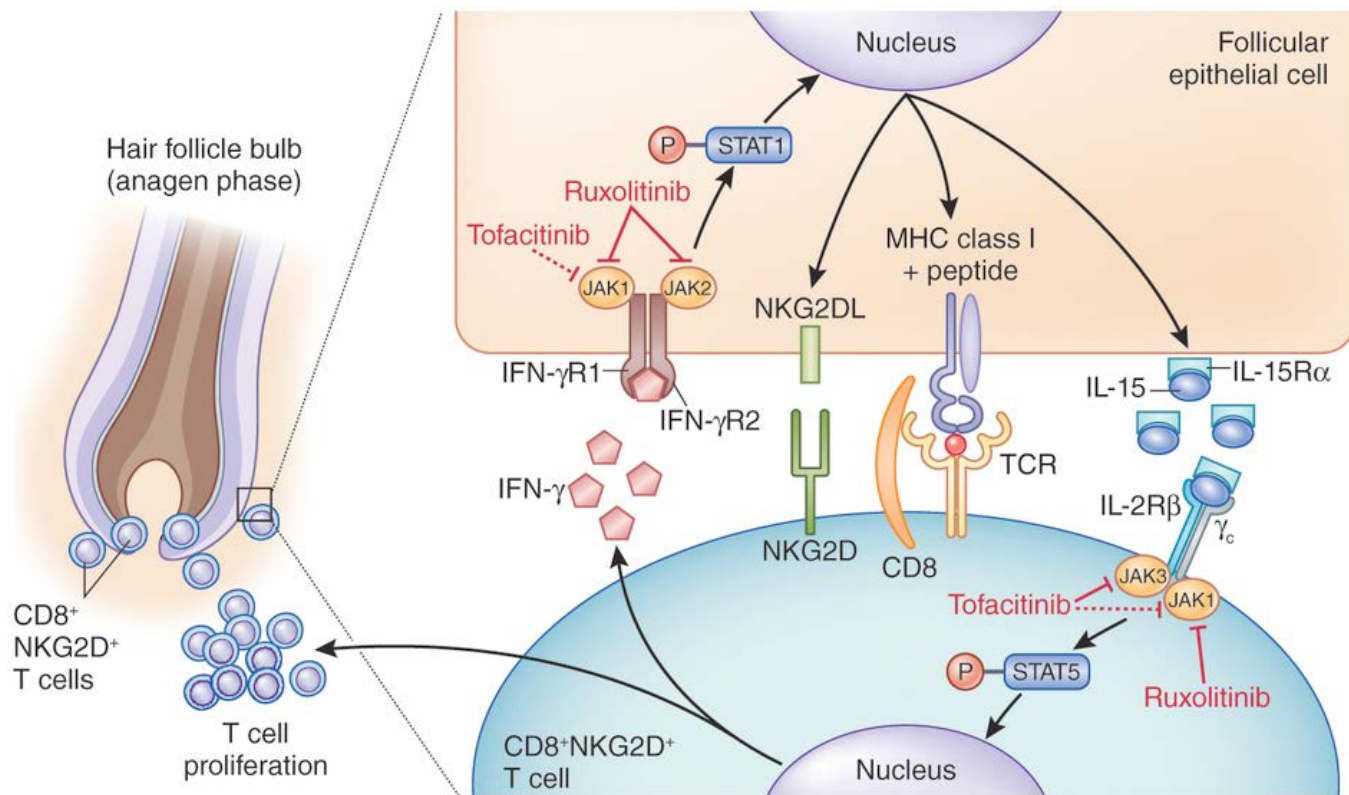
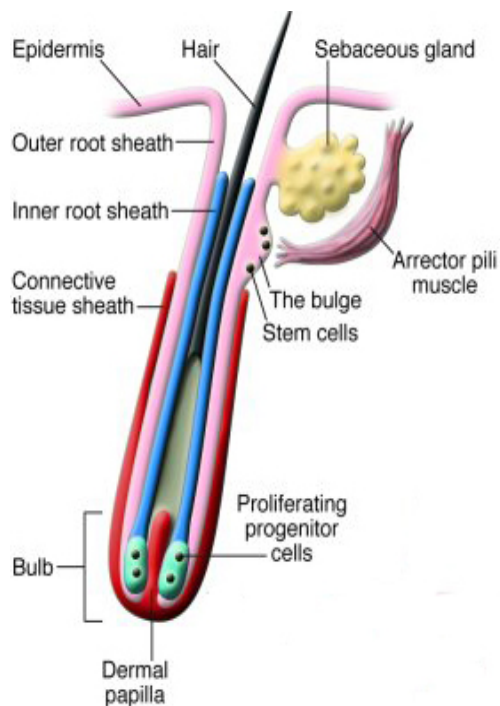
Topical treatment for patchy alopecia areata and vitiligo

ATI-50003

Topical treatment for androgenetic alopecia

¹ Data on File. Aclaris Therapeutics Inc.

Mechanism of Action: JAK Inhibitors in Alopecia Areata



Cotsarelis, J Clin Invest. 2006;116(1):19-22.

Divito & Kupper, Nature Medicine 20, 989–990 (2014).

Solid Foundation in Place

- **Finances**
(Pro Forma as of September 30, 2016)
 - Cash, cash equivalents and marketable securities = \$182M
 - Cash on-hand expected to fund operations and capex through early 2019
- **Intellectual Property**
 - Solid protection across pipeline
 - >150 Patents/Applications (issued and pending worldwide)
- **Team**
 - ~250 years of dermatological experience





Anticipated Milestones

Milestone	2017				2018			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
A-101 SK								
Submit NDA								
Submit MAA								
Expected U.S. approval/launch								
A-101 Common Warts								
Initiate Phase 2B								
Phase 2B data								
ATI-50001/ATI-50002 Alopecia Areata								
Initiate Phase 2 (ATI-50001)								
Phase 2 data (ATI-50001)								
Submit IND (ATI-50002)								
Initiate Phase 2 (ATI-50002)								



Aclaris Investment Summary

Lead candidate A-101 in Seborrheic Keratosis

- Reported positive results from two pivotal Phase 3 (301 & 302) trials
- Plan to submit NDA in 1Q17; potential to be first FDA-approved treatment for SK
- Plan to submit Marketing Authorization Application to EMA in mid-2017

A-101 in Common Warts

- Positive results from Phase 2 clinical trial (WART-201) for verruca vulgaris (common warts)
- Potential to be first FDA-approved prescription drug for common warts; current treatments suboptimal

Oral and Topical JAK Inhibitor Candidates for Alopecia and Vitiligo

- ATI-50001 (oral) for treatment of alopecia areata
 - Initiated pharmacokinetic/pharmacodynamic (PK/PD) trial 4Q16
- ATI-50002 (topical) for treatment of alopecia areata
 - Plan to submit IND 2Q17
 - Plan to Initiate Phase 2 trial 3Q17
- Both ATI-50001 (oral) and ATI-50002 (topical) compounds in development for vitiligo; potential to be first FDA-approved treatment that repigments skin
- Pre-clinical development underway for ATI-50003 (topical) for treatment of androgenetic alopecia



THANK YOU

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