International Research Services, Inc.

An Eight-Week Clinical Study to Evaluate the Efficacy of a Regimen of Topical Products on Skin Condition

Protocol Number:	3931OSM0415
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Study Schedule	Initiation: Screening/ Washout — June 8, 2015 Completion: Week 8 — August 10, 2015
Product:	**Purify #OS-PRD-PUR-200; Catalyst AC–11 #OS-PRD-CAC-030; Spritz Clear Plus #OS-PRD-CLR-100; Quench Plus #OS-PRD-QUE-031**

Study Summary			
Title	An Eight-Week Clinical Study to Evaluate the Efficacy of a Regimen of Topical Products on Skin Condition		
Protocol Number	3931OSM0415		
Sponsor	Osmosis, LLC		
Methodology	Monadic		
Objective	To evaluate the efficacy of one product to improve skin appearance and condition		
Number of Subjects	30 to complete, *target enrollment 35*		
Target Population	Female subjects, age 35-59 years old		
Duration	8 Weeks + 1 week washout (Screening/Washout (T-7D), Baseline, Week 1, Week 4, Week 8)		
Claims	*Claims to be assessed immediately after application of the Catalyst AC-11 product and after prolonged use of the topical product regimen*		
	Claim		*Support*
	Reduces capillary redness and capillary visibility		Expert Clinical Grading SIAScope Subjective Questionnaires Photo Documentation (n=5)
	Improves skin elasticity and firmness		Expert Clinical Grading (elasticity only) Subjective Questionnaires Cutometer
	Improves eyelid laxity		Expert Clinical Grading Subjective Questionnaires Photo Documentation (n=5)
	Improves the appearance of lines/wrinkles		
	Improves skins overall appearance, radiance and luminosity		
Study Products	***Name***		***Formula Number***
	Purify		OS-PRD-PUR-200
	Catalyst AC - 11		OS-PRD-CAC-030
	Spritz Clear Plus		OS-PRD-CLR-100
	Quench Plus		OS-PRD-QUE-031
Supportive Products	Dove Beauty Bar, White		NA
	Purpose Dual Treatment Moisture Lotion with SPF 15		NA
Statistical Methodology	Descriptive statistics reported for demographics, instrumental and visual assessments. Monadic data analyses will use paired t-test to determine significance of change from Baseline. Questionnaire response frequencies and mean indicated percent improvement reported for each question. All final statistical analyses will be performed on the PP population, significance set at $p \leq 0.05$.		
Study Schedule	Initiation:	Consent / Washout	June 8, 2015
		Baseline	June 15, 2015
		Week 1	June 22, 2015
		Week 4	July 13, 2015
	Completion:	Week 8	August 10, 2015

Summary	This was an eight-week, monadic evaluation of the immediate effects of one test product on the condition and appearance of facial skin and of the long-term effects of a test product regimen on the condition and appearance of facial skin. A study panel of 33 subjects was enrolled in the study and completed participation. Under the conditions of this study, under the conditions of this study, use of **Catalyst AC–11 #OS-PRD-CAC-030** alone and of a regimen consisting of **Purify #OS-PRD-PUR-200; Catalyst AC–11 #OS-PRD-CAC-030; Spritz Clear Plus #OS-PRD-CLR-100; Quench Plus #OS-PRD-QUE-031** led to significant improvements in skin appearance and condition as evidenced by results from expert clinical grading, instrumental assessments and subjective questionnaire results. See Section 20.0 Conclusion for further detail.

Quality Assurance Statement

This report accurately reflects the data derived from the procedures and materials tested in this study. The conclusions are based on an interpretation of the data and have been reviewed by the Principal Investigator(s) and by personnel from International Research Services, Inc. responsible for assuring its accuracy.

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List of Abbreviations

AE	Adverse Event
BL	Baseline
C	Collect
cm	Centimeter
CRF	Case Report Form
CFR	Code of Federal Regulations
D	Dispense
FDA	Food & Drug Administration
GCP	Good Clinical Practices
HIPAA	Health Insurance Portability and Accountability Act
ICF	Informed Consent Form
ICH	International Conference on Harmonization
IND	Investigational New Drug
IRB	Institutional Review Board
IRSI	International Research Services, Inc.
AIDS	Acquired Immunodeficiency Syndrome
n	Number of Subjects
NDA	New Drug Application
PI	Principal Investigator
PP	Per-Protocol
SAE	Serious Adverse Event
SOP	Standard Operating Procedure
T15m	15 minutes post initial product application
TEWL	Trans-Epidermal Water Loss
US	United States
VAS	Visual Analogue Scale

1.0 Introduction

This document is a report for a human research study. This study was conducted according to International Research Services, Inc. research policies and Standard Operating Procedures, U.S. and international standards of Good Clinical Practice (FDA and ICH guidelines) and applicable government regulations.

2.0 Objectives

2.1 Primary Objective

The efficacy of a topical product regimen, including four products intended to improve facial skin appearance and condition, was evaluated by this study.

2.2 Secondary Objective

The immediate efficacy of one topical product intended to improve facial skin appearance and condition was evaluated by this study.

3.0 Study Design

This was an eight-week monadic clinical study to evaluate an individual product's immediate effects and a topical product regimen's effects after one, four and eight weeks of use. Data were analyzed for signs of improvement in facial skin condition and appearance in female subjects who have photodamaged skin. Assessments included expert clinical visual grading, instrumental assessments and photographic documentation. Subjects' perception of product effects was captured via subjective questionnaire. The treatment products were used daily per Sponsor instructions by all subjects for eight weeks. Thirty-three (33) subjects completed study participation. The study was preceded by a one-week washout period, within which subjects discontinued use of all facial cleansers and moisturizers and used only support product on their faces, as directed by IRSI.

Study visits occurred at Screening/ Washout (T-7D), Baseline (BL), Immediate (T15m) and at Weeks 1, 4 and 8 (W1, W4 and W8). A detailed outline of study visits appears in Section 7.0 of the protocol (Appendix I).

3.1 Claims:

Assessment and questionnaire data were analyzed with particular regard to the following desired key product effects for the regimen of four products after prolonged use:

1. **Reduces capillary redness and capillary visibility**, as determined by expert clinical grading, SIAScope, subjective questionnaires and photo documentation.

2. **Improves elasticity and firmness,** as determined by expert clinical grading (elasticity only), Cutometer and subjective questionnaires.

3. **Improves eyelid laxity,** as determined by expert clinical grading, subjective questionnaires and photo documentation.

4. **Improves the appearance of lines/wrinkles**, as determined by expert clinical grading, subjective questionnaires and photo documentation.

5. **Improves skins overall appearance, radiance and luminosity,** as determined by expert clinical grading, subjective questionnaires and photo documentation.

3.2 Claims (Catalyst AC-11)

Assessment and questionnaire data were analyzed with particular regard to the following desired key product effects for the Catalyst AC-11 cream after a single application:

1. **Immediately reduces capillary redness and capillary visibility**, as determined by expert clinical grading, subjective questionnaires and photo documentation.

2. **Immediately improves eyelid laxity,** as determined by expert clinical grading, subjective questionnaires and photo documentation.

3. **Immediately improves elasticity and firmness,** as determined by expert clinical grading (elasticity only), Cutometer and subjective questionnaires (elasticity only).

4. **Immediately improves the appearance of lines/wrinkles**, as determined by expert clinical grading, subjective questionnaires and photo documentation.

5. **Immediately improves skins overall appearance, radiance and luminosity**, as determined by expert clinical grading, subjective questionnaires and photo documentation.

4.0 Product

All products were provided by the Sponsor and were labeled with appropriate codes and proper use instructions. Supportive product(s) were provided by IRSI. Upon receipt, product was logged in and stored in a secure area. Within one month of issuance of the final signed report, unless otherwise instructed in writing, all test products, used and unused, will be destroyed and disposed of in accordance with IRSI's SOP. **Product Descriptions**

Name	Designation	Formula Number	Quantity Received	Date Received
Study Product				
Purify	Cleanser	OS-PRD-PUR-200	45	06-04-15
Catalyst AC-11	Gel	OS-PRD-CAC-030	85	06-04-15
Spritz Clear Plus	Enhancer	OS-PRD-CLR-100	45	06-04-15
Quench Plus	Moisturizer	OS-PRD-QUE-031	85	06-04-15
Supportive Products				
Dove Beauty Bar, White	Washout Cleanser	NA		
Purpose Dual Treatment Moisture Lotion with SPF 15	SPF Moisturizer	NA		

4.2 Product Use Instructions

Subjects were provided with Support Washout Cleanser and SPF Moisturizer approximately seven days before Baseline.

At Baseline, subjects discontinued use of the Support Washout Cleanser and SPF Moisturizer and were provided with the test product regimen to use for the duration of the study.

At the Baseline visit, all subjects applied the Catalyst AC-11 product only to the face following Sponsor instructions under IRSI technician supervision. Sponsor-provided use instructions were explained to subjects and were provided to each subject in their printed Study Instructions (*See* Appendix I Protocol, Appendix I).

Test Product Directions:

Use the test products twice daily, morning and evening in the following sequence:

Step 1: Wash face with Purify:

Apply ½ pump into palm of hand and lather face and neck with warm water, thoroughly Cleanse and rinse until all product has been removed. Dry skin with a soft towel.

Step 2: Apply Catalyst AC-11

Apply two pumps into hand and massage onto face and neck thoroughly. Massage into skin thoroughly.

Step 3: Spritz Clear Plus:

Spray Clear Plus 3-5 times onto face and neck and massage skin again until all product is absorbed into skin. This step is essential to ensure Catalyst AC-11 is fully absorbed.

Step 4: Quench Plus:

Apply 1-2 pumps Quench Plus into hand and massage onto entire face and neck.

Support Product Directions:

Washout Period (T-7d):

Washout Cleanser: Use daily in place of your normal facial cleanser.

SPF Moisturizer: Apply daily in the morning prior to sun exposure, reapply every 2 hours as needed throughout the day during sun exposure during the washout period.

Study Period: Per sponsor, no sunscreen is permitted for use during study period.

Avoid sun exposure to the face, no sunscreen use is permitted, use hats and/or umbrellas when going into sun.

5.0 Population

5.1 Sample Size

The sample size of n=30 was requested by the Sponsor.
A total number of 33 subjects were enrolled in the study and completed participation.

5.2 Inclusion Criteria

1. Females, in good general health, and between the ages of 35 and 59 years old, inclusive, at time of enrollment.
2. Subjects with lines and wrinkles and eyelid laxity as determined by an expert grader at Baseline.
    a. Score of ≥2 cm on 10 cm VAS for fine lines/wrinkles (crow's feet)
    b. Score of ≥2 cm on 10 cm VAS for eyelid laxity
3. A portion of the panel (approximately n=10) with Capillary visibility (telangiectasia)
    a. Score of ≥2 cm on 10 cm VAS for capillary visibility
4. A portion of the panel (approximately n=10) with actinic keratosis as determined by an expert grader at baseline.
    a. Score of ≥2 cm on 10 cm VAS for actinic keratosis severity
5. Willing to be photographed and sign a photograph release form.
6. Able to read, understand and willing to sign an ICF, including HIPAA and state requirements, complete a brief personal/medical history
7. Dependable and willing to attend study visits and comply with all study instructions and requirements, including but not limited to:
    a. Willing to abstain from any other superficial or deep facial procedure during the study (dermabrasion, microdermabrasion, peels, photo facials, laser treatment, facial lesion removal, etc.).
    b. Willing to abstain from use of all other topical products for the duration of the washout period and study period.
    c. Willing to abstain from the use of tanning bed use and recreational sun exposure on the face for the duration of the washout period and study period.

5.3 Exclusion Criteria

1. Subjects using systemic or topical steroids, Accutane, oral or topical estrogens, and/or other medicines affecting skin in a major way during study period or washout period.
2. Subjects with present or previous inflammatory or other skin diseases, such as rosacea, severe acne, Systemic Lupus Erythematosus (SLE), dermatomyositis, scleroderma, etc.
3. Current or Smokers within one month prior to enrollment

General exclusion criteria:

4. Subjects participating in any other clinical studies
5. Subjects having an acute or chronic disease or medical condition, including dermatological problems, which could put her at risk in the opinion of the Principal Investigator or compromise study outcomes. Typical uncontrolled chronic or serious diseases and conditions which would prevent participation in any clinical trial are cancer, AIDS, diabetes, morbid obesity, renal impairment, mental illness, drug/alcohol addiction.
6. Subjects who are unreliable or unlikely to be available for the duration of the study
7. History of allergic reactions, skin sensitization and/or known allergies to cosmetic ingredients, toiletries, sunscreens, etc.
8. Immunocompromised subjects
9. Woman who started Hormone Replacement Therapy within the last three months preceding the screening visit

10. Woman using oral contraception for less than three months before the screening visit or who has changed her contraceptive method within the three months before the Baseline visit or planning to modify her contraception treatment within the duration of the study
11. Woman known to be pregnant, lactating or planning to become pregnant within six months. Subjects who become pregnant during the study must inform the Principal Investigator immediately
12. Individuals unable to communicate or cooperate with the Principal Investigator due to language problems, poor mental development, or impaired cerebral function
13. Employees of IRSI or other testing firms/ laboratories, cosmetic or raw goods manufacturers or suppliers

6.0 Methods

This study was performed in accordance to IRSI final signed clinical study protocol number 3931OSM0415 version 2.6 dated June 29, 2015. A detailed description of study methods is outlined in the attached clinical study protocol (*See* Appendix I).

7.0 Procedure

The five-visit clinical study included one visit for consenting, screening and qualification procedures and washout instructions, another visit for Baseline pre-application and post-application (Immediate) evaluations (BL, T15m), further visits at Week 1 and Week 4 (W1, W4) and a final visit at Week 8 (W8). A detailed description of procedures is outlined in the attached clinical study protocol (*See* Appendix I).

7.1 Procedure Summary Table

Procedures		Screening/ Washout	Baseline	Immediate	Week 1	Week 4	Week 8
Study Initiation and Qualification	Informed Consent and Medical History	X					
	Inclusion/Exclusion Criteria reviewed	X	X				
Dispense/ Collect Products		D *Support*	D *Test*				C
Expert Clinical Grading	- Texture (visual) -Lines/Wrinkles (Crow's Feet) - Radiance/ Luminosity -Eyelid Laxity -Elasticity -Overall Appearance -Capillary Visibility - Actinic Keratosis Severity		X	X	X	X	X
Instrumental Evaluation	SIAScope *(hemoglobin)*		X		X	X	X
	Cutometer *(elasticity, firmness)*		X	X	X	X	X
Photography	Clarity 2DResearch Ti *(n=5, L, R,C views)*		X		X	X	X
Consumer Perception	Subjective Questionnaire			X Catalyst AC-11 only	X	X	X

8.0 Concomitant Medications and Products

The use of any topical skin treatment products (other than those assigned during the study) on the face was prohibited during the washout and study periods. This included, but was not limited to moisturizers, serums, cleansers, sunscreens and medicated creams.

Use of superficial or deep facial procedures during the study was prohibited including dermabrasion, microdermabrasion, peels, photo facials, laser treatments, facial lesion removal.

Major medical procedures were prohibited including endoscopy or any procedure requiring sedation.

The use of color cosmetics was allowed, but introduction of new personal care products was prohibited for the duration of the study.

Smoking was prohibited for the duration of the study.

9.0 Adverse Events

One adverse event was reported during the conduct of this study.

1. Subject #33 reported on July 14, 2015 that she had experienced severe nephrolithiasis on July 13, 2015 which necessitated a visit to hospital emergency room. Kidney stones were passed by subject during emergency room visit and subsequent urinalysis results were within normal ranges. Subject was discharged from the hospital emergency room with no follow-up required and no medications prescribed. The event had no relationship to the study product and no further follow-up from clinic staff was deemed necessary.

10.0 Institutional Review Board

IRB review and approval of this study was not requested by the Sponsor.

11.0 Informed Consent

The informed consent process was completed prior to an individual's involvement in any study related activity. The process was documented using a written informed consent form (ICF) conforming to FDA 21 CFR 50.25 (See Appendix I Protocol, Section 11.0 and Appendix IV).

After review, two copies of the ICF were signed and dated by the individual and the Principal Investigator or his designee administering the consent. One original copy was retained by IRSI and the other was given to the individual.

12.0 Discontinuation of Study

The study was completed on schedule as per the clinical study protocol (and subsequent amendments).

13.0 Changes to the Protocol

13.1 Protocol Amendments

No amendments were made to the final signed protocol for this study.

13.2 Protocol Deviations

Two protocol deviations occurred during the study. See Appendix II for signed protocol deviation form.

1. Minor: Subject # 24 was enrolled at age 60 years, contrary to the protocol, Section 5.2, Inclusion Criteria, number one.
2. Minor: Subject # 02 did not respond to Question # 13 of the Week 4 Questionnaires as required per protocol.

14.0 Monitoring

The Sponsor did not monitor any portion of this clinical study.

15.0 Recording of Data

All data and information, except electronically recorded data, was recorded on specific paper case report forms (CRFs) as described in the clinical study protocol (*See* Appendix I Protocol, Appendix III).

16.0 Quality Control and Quality Assurance

This clinical study has been audited by the IRSI Quality Assurance / Quality Control auditor. The auditor verified study for accuracy, consistency and proper documentation in accordance to IRSI SOPs and practices. Additionally, accuracy of results reported in the body of this report with respect to the results reported in the data listings and statistical report (See Appendix II).

The data listings and database used for statistical analysis was verified against the CRFs. The data listings were verified against the CRFs for 100% of the data, in a randomly selected set of the subjects (25% of the total number of subjects). The statistical report was validated for accuracy and completeness, as well as verifying the correctness of all subject numbers (n) and the analyses performed according to the Statistical Analysis Plan as described in Section 18 of the clinical study protocol.

17.0 Ethics

The study was conducted in accordance with FDA GCP regulations and ICH guidelines in as much as they apply to cosmetic research with the following noted: This was not an IND / NDA clinical trial. IRSI does not assume any Sponsor obligations as stipulated in FDA GCP and ICH documents. This study is not intended for submission to the FDA.

18.0 Statistical Methods

The planned statistical analysis was performed as outlined in the study protocol for each type of data to be acquired. (*See* Protocol, Section 18.0)

The per-protocol (PP) population is defined as the subset of subjects that who complied with the protocol sufficiently to ensure that their data will be likely to exhibit the effects of the treatment. To be considered a PP subject, a subject could not miss more than one study visit (excluding Baseline or Week 8) or be found to be non-compliant with the study protocol at the discretion of the Principal Investigator (PI).

The PP population was used for statistical analysis at each time point. Statistical significance was set at $p \leq 0.05$.

Data Type	Statistical Method	Data Reported
Demographics	Descriptive Statistics	Mean and standard deviation Min and Max Frequency (number and percent)
Clinical Grading for Efficacy, Instrumental Evaluation	Descriptive Statistics Paired T-test (monadic),	Mean and standard deviation Mean percent improvement from Baseline Percent of subjects improving P-value vs. Baseline
Subjective Questionnaire	Descriptive Statistics	Frequency tables (n and %) of each response Percent of subjects responding favorably.

19.0 Results

19.1 Tables

Enrollment and demographic information is reported below in Tables 1.0-2.0. Expert clinical grading results are included in Table 3.0, instrumental results are included in Table 4.0 and subjective questionnaire results are included in Table 5.0.

Table 1.0 Enrollment

Status	n	
Enrolled	33	
Discontinued	0	
Completed Baseline time point	33	
Completed Week 1 time point	33	
Completed Week 4 time point	32	Subject #33 missed the Week 4 visit.
Completed Week 8 time point	33	

Table 2.0 Demographics

Variable	n	Mean ± SD	Min	Max
Age (years)	33	51.51 ± 6.80	35	60*
Height (inches)	33	64.18 ± 2.76	59	69
Weight (pounds)	33	166.90 ± 42.91	96	300
			n	**Percent**
Ethnicity	33	Hispanic or Latino	6	18.2%
		Not Hispanic or Latino	27	81.8%
			n	**Percent**
Race	33	African American or Black	1	3.0%
		White	27	81.8%
		No Response *(see Hispanic or Latino above)*	5	15.2%
			n	**Percent**
Fitzpatrick Skin Type	33	Skin Type I	1	3.0%
		Skin Type II	10	30.3%
		Skin Type III	15	45.5%
		Skin Type IV	6	18.2%
		Skin Type V	1	3.0%
			n	**Percent**
Facial Skin Type	33	Combination	15	45.5%
		Dry	3	9.1%
		Normal	14	42.4%
		Oily	1	3.0%

*See Protocol Deviation #1

Table 3.0 Experts Clinical Grader Evaluation – Catalyst AC-11 – Monadic, Comparison to Baseline

Assessment	Time Point	n	Mean ± SD	Mean Percent Improvement *From BL mean*	Percent of Subjects Showing Improvement *From BL*	P-Value *TX vs. BL*
Texture/Smoothness (visual)	Baseline	33	4.05 ± 0.49			
	Immediate	33	3.07 ± 0.55	23.66%	97.0%	**<0.001***
Fine Lines/Wrinkles (Crow's Feet)	Baseline	33	4.20 ± 0.86			
	Immediate	33	3.71 ± 0.77	11.47%	100%	**<0.001***
Radiance/Luminosity	Baseline	33	4.73 ± 0.42			
	Immediate	33	3.20 ± 0.59	31.52%	93.9%	**<0.001***
Eyelid Laxity	Baseline	33	3.86 ± 0.90			
	Immediate	33	3.66 ± 0.85	4.59%	72.7%	**0.001***
Elasticity (tactile)	Baseline	33	3.90 ± 0.36			
	Immediate	33	3.46 ± 0.35	10.98%	93.9%	**<0.001***
Overall Appearance	Baseline	33	4.80 ± 4.25			
	Immediate	33	4.25 ± 0.57	11.48%	84.8%	**<0.001***
Capillary Visibility	Baseline	19^	4.38 ± 0.68			
	Immediate	19^	4.14 ± 0.71	5.56%	78.9%	**0.001***
Actinic Keratosis Severity	Baseline	14	3.59 ± 0.66			
	Immediate	14	3.28 ± 0.58	8.37%	86.7%	**<0.001***

^Only subjects who present Capillary Visibility and Actinic Keratosis Severity at Baseline were assessed for all visits.
NI=No Improvement
*Indicates a statistically significant improvement compared to baseline, p≤0.05
**Indicates a statistically significant worsening compared to baseline, p≤0.05

Table 3.1 Experts Clinical Grader Evaluation – Regimen – Monadic, Comparison to Baseline

Assessment	Time Point	n	Mean ± SD	Mean Percent Improvement *From BL mean*	Percent of Subjects Showing Improvement *From BL*	P-Value *TX vs. BL*
Texture/Smoothness (visual)	Baseline	33	4.05 ± 0.49			
	Week 1	33	4.27 ± 0.44	NI	42.4%	0.069
	Week 4	32	4.12 ± 0.27	NI	59.4%	0.577
	Week 8	33	3.59 ± 0.49	10.13%	75.8%	**<0.001***
Fine Lines/Wrinkles (Crow's Feet)	Baseline	33	4.20 ± 0.86			
	Week 1	33	4.66 ± 0.98	NI	18.2%	**0.002****
	Week 4	32	4.00 ± 0.82	3.80%	62.5%	0.072
	Week 8	33	3.48 ± 0.78	16.67%	87.9%	**<0.001***
Radiance/Luminosity	Baseline	33	4.73 ± 0.42			
	Week 1	33	4.66 ± 0.57	1.28%	57.6%	0.420
	Week 4	32	4.20 ± 0.38	10.84%	84.4%	**<0.001***
	Week 8	33	3.20 ± 0.72	32.00%	100%	**<0.001***
Eyelid Laxity	Baseline	33	3.86 ± 0.90			
	Week 1	33	3.78 ± 0.79	NI	51.5%	0.559
	Week 4	32	3.50 ± 0.59	5.52%	59.4%	**0.009***
	Week 8	33	3.23 ± 0.61	14.08%	81.8%	**<0.001***
Elasticity (tactile)	Baseline	33	3.90 ± 0.36			
	Week 1	33	3.89 ± 0.37	NI	39.4%	0.862
	Week 4	32	3.97 ± 0.27	NI	31.3%	0.153
	Week 8	33	3.50 ± 0.35	9.80%	75.8%	**<0.001***
Overall Appearance	Baseline	33	4.80 ± 4.25			
	Week 1	33	4.61 ± 0.35	3.63%	69.7%	**0.008***
	Week 4	32	4.33 ± 0.35	8.89%	84.4%	**<0.001***
	Week 8	33	3.80 ± 0.51	20.91%	100%	**<0.001***
Capillary Visibility	Baseline	19^	4.38 ± 0.68			
	Week 1	19^	4.37 ± 0.65	NI	42.1%	0.907
	Week 4	18^	3.92 ± 0.57	11.29%	88.9%	**<0.001***
	Week 8	19^	3.26 ± 0.61	25.19%	89.5%	**<0.001***
Actinic Keratosis Severity	Baseline	14	3.59 ± 0.66			
	Week 1	14^	3.80 ± 0.66	NI	35.7%	0.284
	Week 4	13^	3.34 ± 0.42	3.29%	53.8%	0.251
	Week 8	14^	2.95 ± 0.52	15.49%	92.9%	**0.005***

^Only subjects who present Capillary Visibility and Actinic Keratosis Severity at Baseline were assessed for all visits.
NI=No Improvement
*Indicates a statistically significant improvement compared to baseline, p≤0.05
**Indicates a statistically significant worsening compared to baseline, p≤0.05

Table 4.0 Instrumental Evaluation - Catalyst AC-11 – Monadic, Comparison to Baseline

Assessment		Time Point	n	Mean ± SD	Mean Percent Improvement *From BL mean*	Percent of Subjects Showing Improvement *From BL*	P-Value *TX vs. BL*
Cutometer	Firmness (R0 Uf)	Baseline	33	0.23 ± 0.05			
		Immediate	33	0.24 ± 0.05	NI	45.5%	0.335
	Elasticity (R5 Ur/Ue)	Baseline	33	0.39 ± 0.14			
		Immediate	33	0.40 ± 0.17	2.99%	51.5%	0.787

NI= No improvement
*Indicates a statistically significant improvement compared to baseline, p≤0.05
**Indicates a statistically significant worsening compared to baseline, p≤0.05

Table 4.1 Instrumental Evaluation – Regimen – Monadic, Comparison to Baseline

Assessment		Time Point	n	Mean ± SD	Mean Percent Improvement *From BL mean*	Percent of Subjects Showing Improvement *From BL*	P-Value *TX vs. BL*
Cutometer	Firmness (R0 Uf)	Baseline	33	0.23 ± 0.05			
		Week 1	33	0.24 ± 0.04	NI	33.3%	0.232
		Week 4	32	0.22 ± 0.04	1.13%	59.4%	0.227
		Week 8	33	0.21 ± 0.04	5.59%	63.6%	**0.008***
	Elasticity (R5 Ur/Ue)	Baseline	33	0.39 ± 0.14			
		Week 1	33	0.38 ± 0.07	11.32%	51.5%	0.823
		Week 4	32	0.52 ± 0.10	45.00%	84.4%	**<0.001***
		Week 8	33	0.72 ± 0.11	109.85%	97.0%	**<0.001***
SIAScope	Hemoglobin	Baseline	33	470.98 ± 45.00			
		Week 1	33	569.70 ± 73.71	NI	3.0%	**<0.001****
		Week 4	32	169.20 ± 23.73	63.56%	100%	**<0.001***
		Week 8	33	166.19 ± 29.32	64.25%	100%	**<0.001***

NI= No improvement
*Indicates a statistically significant improvement compared to baseline, p≤0.05
**Indicates a statistically significant worsening compared to baseline, p≤0.05

Table 5.0 Subjective Questionnaire - Catalyst AC-11– Consumer Perception

Question	n	Immediate Response n (%)					Percent Responding Favorably
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
1. The product immediately reduced the capillary redness of my facial skin.	33	1 (3.0%)	5 (15.2%)	24 (72.7%)	1 (3.0%)	2 (6.1%)	18.2%
2. The product immediately improved the laxity (droopiness) of my eyelid.	33	1 (3.0%)	8 (24.2%)	21 (63.6%)	1 (3.0%)	2 (6.1%)	27.3%
3. The product immediately improved the firmness of my facial skin.	33	4 (12.1%)	13 (39.4%)	14 (42.4%)	1 (3.0%)	1 (3.0%)	**51.5%**
4. The product immediately improved the elasticity of my facial skin.	33	4 (12.1%)	16 (48.5%)	11 (33.3%)	1 (3.0%)	1 (3.0%)	**60.6%**
5. The product immediately lifted my facial skin and improved the appearance of sagging in my face.	33	3 (9.1%)	12 (36.4%)	16 (48.5%)	1 (3.0%)	1 (3.0%)	45.5%
6. The product immediately tightened my facial skin.	33	3 (9.1%)	19 (57.6%)	9 (27.3%)	1 (3.0%)	1 (3.0%)	**66.7%**
7. The product immediately improved the appearance of lines/ wrinkles on my crow's feet area.	33	2 (6.1%)	4 (12.1%)	24 (72.7%)	1 (3.0%)	2 (6.1%)	18.2%
8. The product immediately improved the appearance of lines/ wrinkles on my facial skin.	33	1 (3.0%)	4 (12.1%)	25 (75.8%)	1 (3.0%)	2 (6.1%)	15.2%
9. My facial skin appears less dull and more radiant immediately after using the product.	33	1 (3.0%)	16 (48.5%)	13 (39.4%)	2 (6.1%)	1 (3.0%)	**51.5%**
10. The product immediately improved the appearance of my facial skin, illuminating my complexion with a fresh youth infused glow.	33	2 (6.1%)	12 (36.4%)	16 (48.5%)	2 (6.1%)	1 (3.0%)	42.4%
11. The product immediately enhanced the overall appearance of my facial skin.	33	2 (6.1%)	13 (39.4%)	15 (45.5%)	2 (6.1)	1 (3.0%)	45.5%
12. I did not experience any irritation after product application.	33	13 (39.4%)	11 (33.3%)	7 (21.2%)	1 (3.0%)	1 (3.0%)	**72.7%**
Question	**n**	**Response n (%)**					**Percent Responding Favorably**
		Strongly Agree	**Agree**	**Neutral**	**Disagree**	**Strongly Disagree**	**N/A**
13. I immediately felt there was a relief in my actinic keratosis (scaly, crusty lesion).	14*	1 (6.7%)	3 (20%)	9 (60%)	2 (13.3%)	0 (0.0%)	19	21.4%

Bold/ Shaded = the majority of subjects responded favorably, >50%

*Only subjects included in the Actinic Keratosis group (n=14) were included in the analysis.

Table 5.0 Subjective Questionnaire – Regimen – Consumer Perception (Continued)

Question	n	Week 1 Response n (%)					Percent Responding Favorably
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
1. The product reduced the capillary redness of my facial skin.	33	2 (6.1%)	11 (33.3%)	16 (48.5%)	3 (9.1%)	1 (3.0%)	39.4%
2. The product improved the laxity (droopiness) of my eyelid.	33	0 (0.0%)	12 (36.4%)	18 (54.5%)	2 (6.1%)	1 (3.0%)	36.4%
3. The product improved the firmness of my facial skin.	33	3 (9.1%)	20 (60.6%)	9 (27.3%)	0 (0.0%)	1 (3.0%)	**69.7%**
4. The product improved the elasticity of my facial skin.	33	3 (9.1%)	17 (51.5%)	11 (33.3%)	1 (3.0%)	1 (3.0%)	**60.6%**
5. The product lifted my facial skin and improved the appearance of sagging in my face.	33	3 (9.1%)	12 (36.4%)	15 (45.5%)	2 (6.1%)	1 (3.0%)	45.5%
6. The product tightened my facial skin.	33	3 (9.1%)	15 (45.5%)	14 (42.4%)	0 (0.0%)	1 (3.0%)	**54.5%**
7. The product improved the appearance of lines/ wrinkles on my crow's feet area.	33	1 (3.0%)	13 (39.4%)	16 (48.5%)	2 (6.1%)	1 (3.0%)	42.4%
8. The product improved the appearance of lines/ wrinkles on my facial skin.	33	2 (6.1%)	12 (36.4%)	16 (48.5%)	2 (6.1%)	1 (3.0%)	42.4%
9. My facial skin appears less dull and more radiant after using the product.	33	4 (12.1%)	17 (51.5%)	10 (30.3%)	1 (3.0%)	1 (3.0%)	**63.6%**
10. The product improved the appearance of my facial skin, illuminating my complexion with a fresh youth infused glow.	33	2 (6.1%)	18 (54.5%)	10 (30.3%)	2 (6.1%)	1 (3.0%)	**60.6%**
11. The product enhanced the overall appearance of my facial skin.	33	4 (12.1%)	17 (51.5%)	9 (27.3%)	2 (6.1%)	1 (3.0%)	**63.6%**
12. I did not experience any irritation after product application.	33	16 (48.5%)	15 (45.5%)	2 (6.1%)	0 (0.0%)	0 (0.0%)	**93.9%**

Question	n	Response n (%)						Percent Responding Favorably
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	N/A	
13. I felt there was a relief in my actinic keratosis (scaly, crusty lesion).	14*	3 (20.0%)	4 (26.7%)	6 (40.0%)	1 (6.7%)	0 (0.0%)	**19**	50.0%

Bold/ Shaded = the majority of subjects responded favorably, >50%

*Only subjects included in the Actinic Keratosis group (n=15) were included in the analysis.

Table 5.0 Subjective Questionnaire – Regimen – Consumer Perception (Continued)

Question	n	Week 4 Response n (%)					Percent Responding Favorably
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
1. The product reduced the capillary redness of my facial skin.	32	5 (15.6%)	9 (28.1%)	14 (43.8%)	4 (12.5%)	0 (0.0%)	43.8%
2. The product improved the laxity (droopiness) of my eyelid.	32	4 (12.5%)	9 (28.1%)	16 (50.0%)	3 (9.4%)	0 (0.0%)	40.6%
3. The product improved the firmness of my facial skin.	32	4 (12.5%)	18 (56.3%)	7 (21.9%)	2 (6.3%)	1 (3.1%)	**68.8%**
4. The product improved the elasticity of my facial skin.	32	5 (15.6%)	18 (56.3%)	7 (21.9%)	2 (6.3%)	0 (0.0%)	**71.9%**
5. The product lifted my facial skin and improved the appearance of sagging in my face.	32	4 (12.5%)	12 (37.5%)	14 (43.8%)	2 (6.3%)	0 (0.0%)	50.0%
6. The product tightened my facial skin.	32	5 (15.6%)	17 (53.1%)	8 (25.0%)	2 (6.3%)	0 (0.0%)	**68.8%**
7. The product improved the appearance of lines/ wrinkles on my crow's feet area.	32	5 (15.6%)	7 (21.9%)	17 (53.1%)	3 (9.4%)	0 (0.0%)	37.5%
8. The product improved the appearance of lines/ wrinkles on my facial skin.	32	4 (12.5%)	11 (34.4%)	14 (43.8%)	3 (9.4%)	0 (0.0%)	46.9%
9. My facial skin appears less dull and more radiant after using the product.	32	6 (18.8%)	17 (53.1%)	7 (21.9%)	2 (6.3%)	0 (0.0%)	**71.9%**
10. The product improved the appearance of my facial skin, illuminating my complexion with a fresh youth infused glow.	32	5 (15.6%)	15 (46.9%)	11 (34.4%)	1 (3.1%)	0 (0.0%)	**62.5%**
11. The product enhanced the overall appearance of my facial skin.	32	6 (18.8%)	19 (59.4%)	6 (18.8%)	1 (3.1%)	0 (0.0%)	**78.1%**
12. I did not experience any irritation after product application.	32	13 (40.6%)	15 (46.9%)	3 (9.4%)	1 (3.1%)	0 (0.0%)	**87.5%**

Question	n	Response n (%)						Percent Responding Favorably
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	N/A	
13. I felt there was a relief in my actinic keratosis (scaly, crusty lesion).	12*^	1 (8.3%)	4 (33.3%)	6 (50.0%)	1 (8.3%)	0 (0.0%)	20	41.7%

Bold/ Shaded = the majority of subjects responded favorably, >50%

*Only subjects included in the Actinic Keratosis group (n=14) were included in the analysis.

^1 subject (#2) responded with an NA for question 13 and subject #33 did not attend the Week 4 visit (12 subjects analyzed).

Table 5.0 Subjective Questionnaire – Regimen – Consumer Perception (Continued)

Question	n	Week 8 Response n (%)					Percent Responding Favorably
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	
1. The product reduced the capillary redness of my facial skin.	33	8 (24.2%)	11 (33.3%)	12 (36.4%)	2 (6.1%)	0 (0.0%)	**57.6%**
2. The product improved the laxity (droopiness) of my eyelid.	33	4 (12.1%)	15 (45.5%)	11 (33.3%)	3 (9.1%)	0 (0.0%)	**57.6%**
3. The product improved the firmness of my facial skin.	33	9 (27.3%)	17 (51.5%)	5 (15.2%)	2 (6.1%)	0 (0.0%)	**78.8%**
4. The product improved the elasticity of my facial skin.	33	5 (15.2%)	17 (51.5%)	10 (30.3%)	1 (3.0%)	0 (0.0%)	**66.7%**
5. The product lifted my facial skin and improved the appearance of sagging in my face.	33	6 (18.2%)	12 (36.4%)	14 (42.4%)	1 (3.0%)	0 (0.0%)	**54.5%**
6. The product tightened my facial skin.	33	8 (24.2%)	17 (51.5%)	7 (21.2%)	1 (3.0%)	0 (0.0%)	**75.8%**
7. The product improved the appearance of lines/ wrinkles on my crow's feet area.	33	6 (18.2%)	12 (36.4%)	13 (39.4%)	2 (6.1%)	0 (0.0%)	**54.5%**
8. The product improved the appearance of lines/ wrinkles on my facial skin.	33	6 (18.2%)	10 (30.3%)	15 (45.5%)	2 (6.1%)	0 (0.0%)	48.5%
9. My facial skin appears less dull and more radiant after using the product.	33	9 (27.3%)	18 (54.5%)	5 (15.2%)	1 (3.0%)	0 (0.0%)	**81.8%**
10. The product improved the appearance of my facial skin, illuminating my complexion with a fresh youth infused glow.	33	7 (21.2%)	17 (51.5%)	8 (24.2%)	1 (3.0%)	0 (0.0%)	**72.7%**
11. The product enhanced the overall appearance of my facial skin.	33	7 (21.2%)	18 (54.5%)	7 (21.2%)	1 (3.0%)	0 (0.0%)	**75.8%**
12. I did not experience any irritation after product application.	33	21 (63.6%)	9 (27.3%)	3 (9.1%)	0 (0.0%)	0 (0.0%)	**90.9%**

Question	n	Response n (%)						Percent Responding Favorably
		Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	N/A	
13. I felt there was a relief in my actinic keratosis (scaly, crusty lesion).	13*^	2 (15.4%)	4 (30.8%)	6 (46.2%)	1 (7.7%)	0 (0.0%)	**20**	46.2%

Bold/ Shaded = the majority of subjects responded favorably, >50%

*Only subjects included in the Actinic Keratosis group (n=14) were included in the analysis.

^1 subject (#2) responded with an NA for question 13 (13 subjects analyzed).

19.2 Discussion

19.2.1 Enrollment and Demographics

At least 30 female subjects, ages 35 and 59 years old, were required to complete study participation. The study completed with 33 female subjects with an age range of 35 to 60 with an average age of 51.51 years old. The population's ethnicity was 81.8% Non-Hispanic or Latino and 18.2% Hispanic or Latino. The population's reported race was 81.8% White, 15.2% No Response (Hispanic or Latino) and 3.0% African American or Black.

19.2.2 Expert Visual Grading

Catalyst AC-11:

Analysis of results revealed statistically significant improvement from Baseline in mean scores for the appearance of facial skin's texture/smoothness (visual), fine lines/wrinkles-crow's feet, radiance / luminosity, eyelid laxity, elasticity (tactile), overall appearance, capillary visibility and actinic keratosis severity immediately after use.

Of particular note, immediate improvement in the appearance of fine lines/wrinkles – crow's feet was seen in 100 percent of subjects and more than 90 percent showed immediate improvement in the appearance of skin texture/smoothness (visual), radiance/luminosity and elasticity (tactile).

Regimen:

Analysis of results revealed statistically significant improvement from Baseline in mean scores for the appearance of facial skin's texture/smoothness (visual), fine lines/wrinkles-crow's feet, radiance / luminosity, eyelid laxity, elasticity (tactile), overall appearance, capillary visibility and actinic keratosis severity after 8 weeks of use. Further statistically significant improvement from Baseline was observed in mean score for overall appearance at Weeks 1 and 4, and for radiance / luminosity, eyelid laxity and capillary visibility at Week 4.

Further, 100 percent of subjects showed improvement from Baseline to Week 8 in results for the appearance of radiance/luminosity and overall appearance, and more than 90 percent showed improvement from Baseline to Week 8 in results for the appearance of actinic keratosis severity.

Statistically significant worsening from Baseline was observed in mean score for the appearance of facial skin's fine lines/wrinkles-crow's feet at the Week 1 visit.

19.2.3 Instrumental Assessments

Catalyst AC-11:

Cutometer: No Statistically significant improvements from Baseline were observed in mean Cutometer results for skin firmness or skin elasticity immediately following product application.

Regimen:

Cutometer: Statistically significant improvements from Baseline were observed in mean Cutometer results for skin firmness at the Week 8 visit and for skin elasticity at the Week 4 and Week 8 visits.

Statistically significant improvement from Baseline was observed in SIAscope results for skin hemoglobin at the Week 4 and 8 visits. Alternately, statistically significant worsening from Baseline was observed in SIAscope results for hemoglobin at Week 1.

19.2.4 Subjective Questionnaire

Catalyst AC-11:

The majority of subjects (>50%) responded favorably ("agree" or "strongly agree") to the statements "**The product immediately improved the firmness of my facial skin**", "**The product immediately improved the elasticity of my facial skin**", "**The product immediately tightened my facial skin**", "**My facial skin appears less dull and more radiant immediately after using the product**" and "**I did not experience any irritation after product application**".

Regimen:

At Weeks 1, 4 and 8 the majority of subjects responded favorably to questions regarding improvement in the appearance of facial skin's **firmness**, **elasticity**, **tightness**, **radiance**, **youthful complexion** and its **overall appearance**. The majority also indicated that they **did not experience any irritation**.

Further, at Week 8, the majority of subjects responded favorably to questions regarding improvement in the appearance of **capillary redness**, **eyelid laxity**, **facial sagging** and **lines/wrinkles – crow's feet area**.

20.0 Conclusion

In conclusion, under the conditions of this study, use of **Catalyst AC–11 #OS-PRD-CAC-030** alone and of a regimen consisting of **Purify #OS-PRD-PUR-200; Catalyst AC–11 #OS-PRD-CAC-030; Spritz Clear Plus #OS-PRD-CLR-100; Quench Plus #OS-PRD-QUE-031** led to significant improvements in skin appearance and condition as evidenced by results from expert clinical grading, instrumental assessments and subjective questionnaire results.

Catalyst AC–11 #OS-PRD-CAC-030: Expert clinical grading revealed immediate, statistically significant improvements in the appearance of facial skin's texture/smoothness (visual), fine lines/wrinkles-crow's feet, radiance / luminosity, eyelid laxity, elasticity (tactile), overall appearance, capillary visibility and actinic keratosis severity. Subjective questionnaire results revealed that the majority of subjects

believed that its use resulted in immediate improvements in the appearance of facial skin's **firmness, elasticity, tightness** and **radiance**, and that the product **did not cause them any skin irritation.**

Test Product Regimen: Purify #OS-PRD-PUR-200; Catalyst AC–11 #OS-PRD-CAC-030; Spritz Clear Plus #OS-PRD-CLR-100; Quench Plus #OS-PRD-QUE-031: Statistically significant improvements were observed in expert clinical grading results for overall (facial) appearance after one and four weeks of use, for radiance / luminosity, eyelid laxity and capillary visibility after four weeks of use and for texture/smoothness (visual), fine lines/wrinkles-crow's feet, radiance / luminosity, eyelid laxity, elasticity (tactile), overall appearance, capillary visibility and actinic keratosis severity after eight weeks of use.

Instrumentally, improvement in skin's elasticity was observed after four weeks of use, and improvements in both firmness and elasticity were observed after repeated applications for eight weeks.

Subjective questionnaire results revealed that the majority of subjects believed that its use resulted in improvements in the appearance of facial skin's **firmness, elasticity, tightness** and **radiance**, and that the product **did not cause them any skin irritation** after one, four and eight weeks of use, and also resulted in improvements in the appearance of facial skin's **capillary redness, eyelid laxity, facial sagging** and **lines/wrinkles – crow's feet area** after eight weeks of use.

Appendix I

Protocol

Appendix II

Protocol Deviations

Appendix III

Adverse Events

Appendix IV

Statistical Report and Data Listing