



Oyster Point Pharma, Inc.

Clinical Protocol: OPP-101:

A Phase 3, Multicenter, Randomized, Controlled, Double-Masked, Clinical Trial to Evaluate the Efficacy of OC-01 (varenicline)Nasal Spray on Signs and Symptoms of Dry Eye Disease (The ONSET-2 Study)



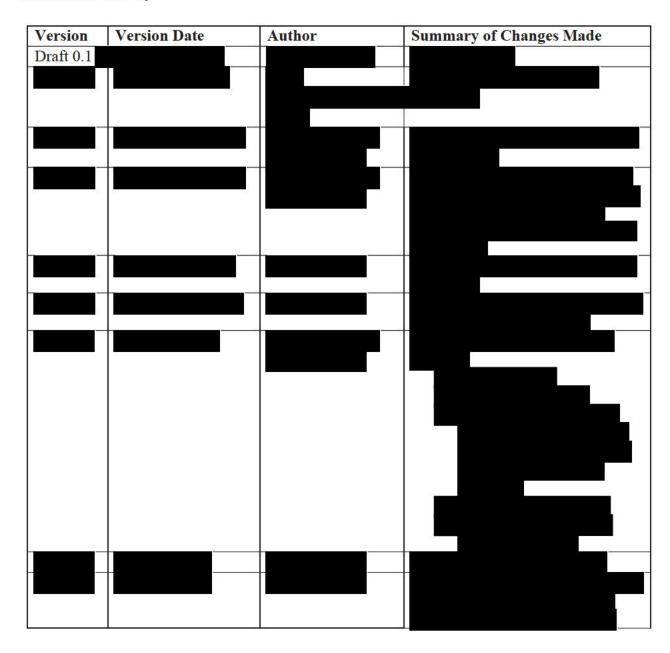
Statistical Analysis Plan Version 3.0

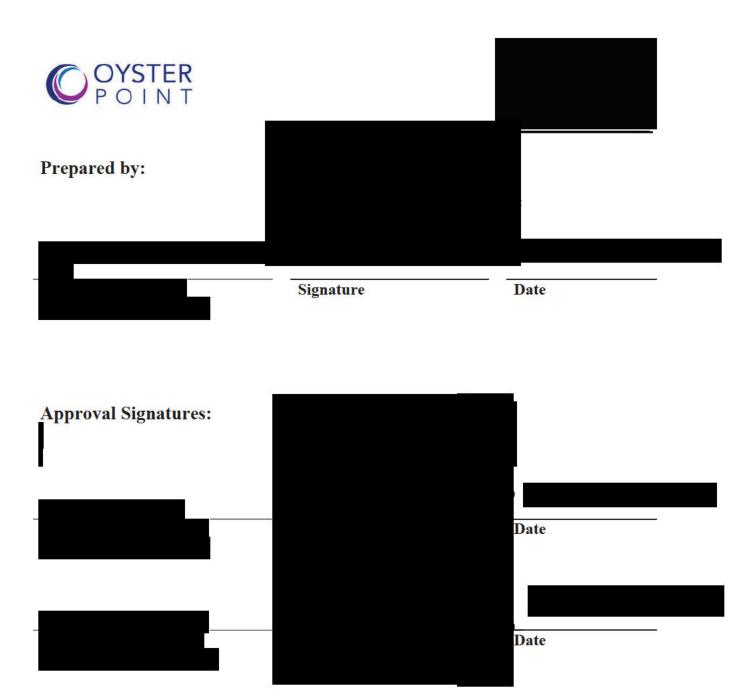
Date: April 29, 2020





Revision History









Contents

1		Syn	opsi	S	6
2		Abl	orevi	ations	9
3		Intr	oduo	ction	11
4		Stu	dy o	bjective	11
5		Stu	dy D	esign	11
6		Pri	nary	and Secondary Endpoints.	11
	6.	1	Prir	nary Efficacy Endpoint	11
	6.2	2	Sec	ondary Efficacy Endpoints	12
	6	3	Oth	er Efficacy Endpoints	12
7		San	nple	Size Determination and Power Calculation	12
8		Stat	istic	al Hypothesis Testing	13
9		Stat	tistic	al Analysis	13
	9.	1	Ger	neral Consideration.	13
	9.2	2	Ana	llysis Populations	13
		9.2.	1	Intention-to-treat (ITT) population	13
		9.2.	2	Per-protocol (PP) population	14
		9.2.	3	Safety population	14
	9.3	3	Uni	t of Analysis	14
	9.4	4	Def	inition of Study Day or Dosing Day	15
	9.:	5	Mis	sing and Partial Data	15
	9.0	6	Pro	tocol Deviations	16
	9.	7	Dat	a Handling with Mis-stratified Subjects	16
	9.8	8	Sub	ject Disposition	17
	9.9	9	Der	nographics and Baseline Characteristics	17
	9.	10	N	fedical, Ocular and Dry Eye History	18
	9.	11	T	reatment Exposure	18
1()	Oct	ılar	Assessments	18
	10	1	S	chirmer's Test	18





10.2	Eye Dryness Score (EDS)	18
10.3	BCVA	19
10.4	Ocular Discomfort Scale	19
10.5	Ocular Surface Disease Index (OSDI)	19
10.6	Corneal Fluorescein Staining	20
10.7	Slit Lamp Biomicroscopy	20
11 Intrai	nasal Examination	20
12 Effic	acy Analysis	21
12.1	Primary Endpoint	23
12.2	Secondary Efficacy Endpoints	23
12.3	Exploratory Analyses	26
12.3	.1 Subjects who did not meet the criterion of receiving a treatment during C exposure 26	AE®
12.3.	2 Sneezing Data	26
12.4	Handling Missing Efficacy Data	26
13 Safet	y Analysis	27
13.1	Adverse Events	27
13.2	Prior and Concomitant Medications	28
14 Subg	roup Analyses	29
Appendix	1 Schedule of Visits and Measurements	30
Appendix	2 Analysis for secondary efficacy endpoints with multiple imputation	32
Study OPI	P-101 SAP Addendum for Efficacy Analysis Based on Impact from COVID-19	34





1 Synopsis

Protocol Title:	A Phase 3, Multicenter, Randomized, Controlled, Double-Masked Clinical Trial to Evaluate the Efficacy of OC-01 (varenicline) Nasal Spray on Signs and Symptoms of Dry Eye Disease (The ONSET-2 Study)
Protocol Number:	OPP-101
Investigational Product:	OC-01 (varenicline) Nasal Spray:
	• 0.6 mg/mL
	• 1.2 mg/mL
Study Objective:	The objective of this study is to evaluate the safety and effectiveness of OC-01 (varenicline) Nasal Spray as compared to placebo on signs and symptoms of dry eye disease (DED)
	750 subjects will be randomized in a 1:1:1 into one of three treatment groups:
Treatment Assignment	• 0.6 mg/mL
	• 1.2 mg/mL
	Placebo (vehicle)
Randomization and	The randomization will be performed by a centralized IWRS system with three
Stratification	stratification factors:
	 Pre-procedure (Baseline) anesthetized Schirmer's score (≤5, >5) measured at the screening/randomization visit. Pre-procedure (Baseline) EDS (<60, ≥60) measured at the screening/randomization visit. Study Site





Efficacy Endpoint

Primary Endpoint:

 Percentage of subjects who achieve <u>></u>10 mm improvement in Schirmer's Test Score from baseline at Visit 4 (Day 28)

Secondary Endpoints

- Mean change from Baseline in Eye Dryness Score (EDS) in the study eye at 5 minutes after threshold defined treatment administration in the Controlled Adverse Environment Chamber at Week 4 (Visit 4a)
- Mean change from Baseline in Eye Dryness Score (EDS) in the study eye at Week 4 (Visit 4b)
- Mean change from Baseline in Schirmer's Test Score (STS) in the study eye at Week 4 (Visit 4b)
- Mean change from Baseline in Inferior Corneal Fluorescein Staining in the study eye at Week 4 (Visit 4b)
- Mean change from Baseline in Eye Dryness Score (EDS) in the study eye at Week 2 (Visit 3)
- Mean change from Baseline in Eye Dryness Score (EDS) in the study eye at Week 1 (Visit 2)
- Mean change from Baseline in Nasal Corneal Fluorescein Staining in the study eye at Week 4 (Visit 4b)
- Mean change from Baseline in Temporal Corneal Fluorescein Staining in the study eye at Week 4 (Visit 4b)
- Mean change from Baseline in Central Corneal Fluorescein Staining in the study eye at Week 4 (Visit 4b)
- Mean change from Baseline in Superior Corneal Fluorescein Staining in the study eye at Week 4 (Visit 4b)
- Mean change from Baseline in Total Corneal Fluorescein Staining in the study eye at Week 4 (Visit 4b)





Statistical Analysis for	The primary efficacy endpoint will be analyzed on the ITT population using a
Primary Endpoint	test comparing each of the treatment groups to placebo controlling for the randomization strata (study site, Baseline Schirmer's Test
	Score and Baseline EDS).
Multiplicity	
Analysis Populations	The intent-to-treat (ITT) population will include all randomized subjects.
	Analyses using the ITT population will group subjects according to the treatment to which they were randomized.
	deadhent to which they were fandomized.





2 Abbreviations

AE adverse event

ANCOVA analysis of covariance

BCVA best corrected visual acuity

BID twice daily

CAE® Controlled Adverse Environment®

CMH Cochran-Mantel-Haenszel
CFR Code of Federal Regulations
eCRF Electronica case report form

CI confidence interval
CRF case report form
DED dry eye disease
EDS Eye Dryness Score

FDA Food and Drug Administration

HIPAA Health Information Portability and Accountability Act

IB Investigator's Brochure ICF informed consent form

ICH International Conference on Harmonization

IRB institutional review board

ITT intent-to-treat

logMAR logarithm of the minimum angle of resolution

LS least square

MAD mucosal atomization device

MAR missing at random

MCAR missing completely at random

MedDRA medical dictionary for regulatory activities

MI multiple imputation

MMRM mixed model for repeated measures

MNAR missing not at random

μL microliter mm millimeter

nAChR nicotinic acetylcholine receptor OSDI© Ocular Surface Disease Index©

PP per protocol

SAE serious adverse event SAP Statistical Analysis Plan





SD Standard deviation STS Schirmer's Test Score

TEAE treatment-emergent adverse event

US United States





3 Introduction

This statistical analysis plan (SAP), which is based on the original protocol of the study protocol dated defines the methods and analyses that Oyster Point Pharma, Inc. (henceforth, Oyster Point) plans to use to analyze the data from Protocol OPP-101. This SAP complies with guidance promulgated by the International Conference on Harmonization (ICH) and the US Food and Drug Administration (FDA). If the protocol is subsequently amended, this SAP may be amended as well. Should the SAP and the protocol be inconsistent with respect to the planned analyses, the language of the SAP prevails.

4 Study objective

The objective of this study is to evaluate the safety and effectiveness of OC-01 (varenicline) Nasal Spray as compared to placebo on signs and symptoms of dry eye disease (DED).

5 Study Design

This is a Phase 3, multicenter, randomized, controlled, double- masked study designed to evaluate the safety and efficacy of OC-01 (varenicline) Nasal Spray in adult participants with DED. Approximately 750 subjects at least 22 years of age with a physician's diagnosis of dry eye disease and meeting all other study eligibility criteria will be randomized to receive an application of OC-01 (varenicline) Nasal Spray or placebo twice daily (BID) for 28 days with three additional long-term follow-up visits at 6 weeks, 6 months and 12 months.

The three treatments are:

- Placebo (vehicle) [control]
- OC-01 (varenicline) Nasal Spray, 0.6 mg/mL
- OC-01 (varenicline) Nasal Spray, 1.2 mg/mL

Subjects who terminate early during the study period will be asked to complete safety assessments (if the subjects agree) prior to study exit. Subjects who are terminated early from the study will not be replaced.

Appendix 1 describes the detailed study visits, measurements, and dosing information.

6 Primary and Secondary Endpoints

6.1 Primary Efficacy Endpoint

The primary endpoint is percentage of subjects who achieve \geq 10 mm improvement in the study eye on Schirmer's Test Score (STS) from baseline at Visit 4 (Day 28).





6.2 Secondary Efficacy Endpoints

There are 11 secondary efficacy endpoints:

- 1. Mean change from Baseline in Eye Dryness Score (EDS) in the study eye at 5 minutes after threshold defined treatment administration in the Controlled Adverse Environment Chamber at Week 4 (Visit 4a)
- 2. Mean change from Baseline in Eye Dryness Score (EDS) in the study eye at Week 4 (Visit 4b)
- 3. Mean change from Baseline in Schirmer's Test Score (STS) in the study eye at Week 4 (Visit 4b)
- 4. Mean change from Baseline in Inferior Corneal Fluorescein Staining in the study eye at Week 4 (Visit 4b).
- 5. Mean change from Baseline in Eye Dryness Score (EDS) at Week 2 (Visit 3)
- 6. Mean change from Baseline in Eye Dryness Score (EDS) at Week 1 (Visit 2)
- 7. Mean change from Baseline in Nasal Corneal Fluorescein Staining in the study eye at Week 4 (Visit 4b)
- 8. Mean change from Baseline in Temporal Corneal Fluorescein Staining in the study eye at Week 4 (Visit 4b)
- 9. Mean change from Baseline in Central Corneal Fluorescein Staining in the study eye at Week 4 (Visit 4b)
- 10. Mean change from Baseline in Superior Corneal Fluorescein Staining in the study eye at Week 4 (Visit 4b)
- 11. Mean change from Baseline in Total Corneal Fluorescein Staining in the study eye at Week 4 (Visit 4b)

6.3 Other Efficacy Endpoints

- · The listed primary and secondary endpoints in the fellow eye
- The listed primary and secondary endpoints combining data from both study and fellow eyes

7 Sample Size Determination and Power Calculation

Approximately 750 subjects will be randomized into a 1:1:1 ratio to the three treatment groups. Approximately 250 subjects in each treatment group are expected to complete their assigned treatment and have endpoint assessments at Visit 4.





8 Statistical Hypothesis Testing

The null hypothesis for the primary endpoint is to test equality of the percentage of subjects who have ≥ 10mm change from baseline to Visit 4 in STS between the active drug-treated subjects and the placebo-treated subjects.

$$H_0$$
: P1 - Pp = 0 vs. H_1 : P1 - Pp \neq 0

or

$$H_0$$
: Ph - Pp = 0 vs. H_1 : Ph - Pp \neq 0

where Pl, Ph, and Pp denote the percentage of subjects in each group (low dose, high dose, and placebo, respectively) who have ≥ 10 mm change from baseline to Visit 4 in STS.

9 Statistical Analysis

9.1 General Consideration

Descriptive and inferential statistics will be used to summarize results of Protocol OPP-101. Continuous variables will be summarized using the number of subjects (n), mean, SD, median, 25th and 75th percentiles, and minimum and maximum. Categorical variables will be summarized using frequency counts and percentages. Baseline measures will be defined as the last measure prior to the initiation of study treatment, usually at Visit 1 screening.

All summaries for safety data and efficacy data will be presented by treatment group. For the baseline characteristics, all summaries will be presented by treatment group and overall. All collected data will be presented in listings which will be sorted by treatment, subject ID, and visit when it is appropriate. Summaries, data listings, and statistical analyses will be generated using SAS® Version 9.4 or higher.

9.2 Analysis Populations

9.2.1 Intention-to-treat (ITT) population

The ITT population will include all randomized subjects. Analyses using the ITT population will group subjects according to the treatment to which they were randomized.





9.2.2 Per-protocol (PP) population

The PP population will include all subjects in the ITT population with post-baseline (Visit 1) data, excluding subjects who have major protocol deviations. Major protocol deviations will be identified prior to database lock by the sponor. Analyses using the PP population will group subjects according to the treatment to which they were treated.

9.2.3 Safety population

The safety population will include all randomized subjects who received at least one dose of the study drug. Analysis of the safety population will group subjects according to the treatment actually received.

9.3 Unit of Analysis

For efficacy endpoints, the unit of analysis will be the study eye as defined as the eye that meets all inclusion and exclusion criteria. If both eyes qualify, then the study eye will be the eye with the greatest increase in tear production with stimulation by a cotton swab at the Screening Visit. If there is no difference in stimulated tear production, the study eye will be the eye with the lower Schirmer's Test Score at screening. If there is no difference for either measure, the right eye will be used as the study eye.

For safety endpoints, both eyes will be analyzed.





9.4 Definition of Study Day or Dosing Day

Study and dosing days are defined as follows:

Study Day = [Event date – Randomization date + 1] if after randomization

[Event date – Randomization date] if before randomization

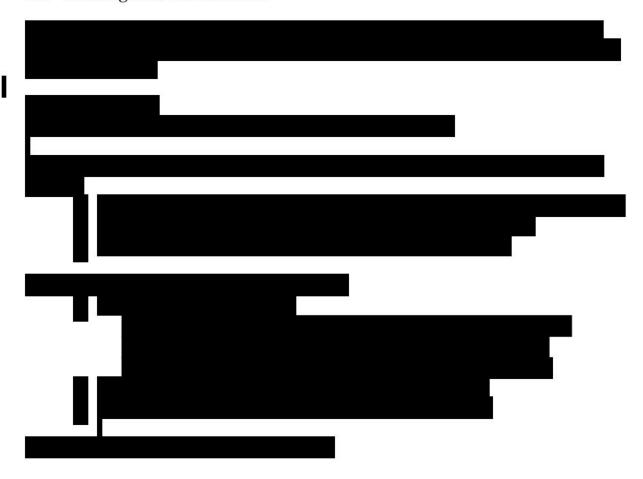
Dosing Day= [Event date – First dosing date + 1] if after first dosing date

[Event date – First dosing date] if before first dosing date.

Note that with the definition above, days of "0" will not be used.

For subjects whose reference date is missing, the study day will also be categorized as missing.

9.5 Missing and Partial Data







9.6 Protocol Deviations



9.7 Data Handling with Mis-stratified Subjects

Subjects are randomized through an IWRS system with 3 stratification factors:

1. Pre-procedure (Baseline) anesthetized Schirmer's score (<5, >5) measured at the screening/randomization visit.





- 2. Pre-procedure (Baseline) EDS (<60, >60) measured at the screening/randomization visit.
- 3. Study Site.

Subjects may be mis-stratified for the baseline STS or baseline EDS in the IWRS. The analyses using the ITT and PP populations will follow the stratification factor to which each subject was categorized in the IWRS system. A sensitivity analysis using the corrected stratification factor may be performed as a related analysis.

9.8 Subject Disposition

The number and percentage of subjects randomized and included in each analysis population will be summarized by treatment and overall. Reasons for excluding subjects from the analysis populations will be presented in a by-subject listing.

The number of randomized subjects who completed the study, discontinued early from study drug, and reasons for discontinuation will be summarized by treatment group and overall. The Case Report Form (CRF) lists the following reasons why subjects may discontinue treatment before completing of the study:

- Non-fatal adverse event (AE)
- Protocol violation
- Lost to follow-up
- Pregnancy
- Physician decision
- Subject non-compliance
- Death
- Study terminated by sponsor
- Withdrawal by subject
- Other reasons

9.9 Demographics and Baseline Characteristics

Continuous variables will be summarized using the number of subjects (n), mean, SD, median, 25th and 75th percentiles, and minimum and maximum. Categorical variables will be summarized using counts and percentages. Summary data will be presented by treatment group and overall.

The following demographic and baseline characteristics will be summarized: age, gender, ethnicity, race, and ocular history.

Age in years will be calculated as the integer portion of the following: [(Date of informed consent - Date of birth) + 1] / 365.25.





Other baseline measurements, such as baseline visual acuity, will be summarized by treatment group.

9.10 Medical, Ocular and Dry Eye History

Medical history terms and ocular history terms will be coded using the Medical Dictionary for Regulatory Activities (MedDRA) version 22.0 and the number and percent of subjects with medical history will be summarized by (SOC) and Preferred Term (PT) for each treatment group based on the safety population.

In addition, the duration of ocular history and dry eye history will be summarized by treatment group and overall.

9.11 Treatment Exposure

Each randomized subject will receive an application of OC-01 (varenicline) Nasal Spray or placebo twice daily (BID) for 28 days. Duration of exposure to study treatment, in days, will be summarized for all randomized subjects. Summary statistics for duration of exposure will be presented by visit and treatment group.

10 Ocular Assessments

Ocular assessments will occur at baseline and post-baseline study visits. The results, grade, clinical significance, and relatedness to administration procedure and study drug, will be listed, summarized in tables, and presented in figures as appropriate.

10.1 Schirmer's Test

The Schirmer's Test with topical anesthetic will be performed to assess tear production at the Screening Visit (Visit 1). This first Schirmer's Test, which should be performed after corneal fluorescein staining, will be used as the baseline Schirmer's Test score. A second anesthetized Schirmer's Test with nasal stimulation using cotton swab will occur 10 minutes after the first anesthetized Schirmer's Test. Additional Schirmer's Tests with topical anesthetic will be assessed after the first treatment at Visit 1. At Week 2 (Visit 3), Week 4 (Visit 4b), the Schirmer's Tests will be performed concurrent with treatment.

10.2 Eye Dryness Score (EDS)

The Eye Dryness Score (EDS) will be assessed using a Visual Analog Scale (VAS). Subjects score EDS at Screening (Visit 1), Day 7 (Visit 2), Week 2 (Visit 3), Week 4 (Visit 4; pre-CAE®), Week 4 in the CAE® chamber (Visit 4a; pre-treatment followed by post-treatment





every 5 minutes within the CAE® for a total of 120 minutes), Week 4 (Visit 4b), and Early Termination (if necessary). At Visit 4, EDS from multiple time points and change in EDS from pre- to post-treatment will be collected and summarized by CAE exposure period and by treatment group. Participants will be asked to rate their ocular symptoms (both eyes simultaneously).

Some subjects did not meet the criterion of receiving a study drug during $CAE^{\$}$ exposure (Ocular Discomfort score ≥ 3 at two or more consecutive time points in at least one eye during $CAE^{\$}$ exposure). For such subjects, the EDS collected during $CAE^{\$}$ exposure will be treated as missing and the EDS prior to entering $CAE^{\$}$ will be carried forward to impute the missing EDS during $CAE^{\$}$ exposure.

10.3 BCVA

Best corrected visual acuity (BCVA) will be performed and collected at Screening (Visit 1), Day7 (Visit 2), Week 2 (Visit 3), Week 4 (Visits 4a (pre-CAE) and 4b), and Early Termination (if necessary). Visual function of the study and fellow eye will be assessed starting at 10 feet using the best corrected ETDRS protocol. Visual acuity examiners must be certified to ensure consistent measurement of BCVA. In order to provide standardized and well-controlled assessments of visual acuity during the study, all visual acuity assessments at a single site must be performed consistently using the same lighting conditions and same correction, if possible, during the entire study. If the same correction cannot be used (e.g., a subject broke his/her glasses), the reason for the change in correction should be documented. BCVA will be summarized by visit and by treatment group for both study and fellow eyes.

10.4 Ocular Discomfort Scale

The Ocular Discomfort Scale (ODS) will be collected at Screening (Visit 1) and Week 4 (Visit 4a; pre-CAE and post-CAE). Subjects will grade themselves on the ODS with scores from 0 to 4 to indicate the level of discomfort: 0 corresponds to "No discomfort", 1 to "Intermittent awareness", 2 to "Constant awareness", 3 to "Intermittent discomfort", and 4 to "Constant discomfort". The ODS collected at Visit 4a will be used to determine treatment administration. Treatment of study drug will be administered when a participant reports an ODS ≥ 3 at two or more consecutive time points in at least one eye during CAE exposure (subjects with an ODS of 3 at time 0 for an eye must report an ODS of 4 for two consecutive measurements for that eye) using the Ora Calibra Scale. ODS will be summarized by visit, pre-CAE and every 5 minutes in CAE at Visit 4, and treatment group for both study and fellow eyes.

10.5 Ocular Surface Disease Index (OSDI)

The OSDI will be collected at screening. The protocol provides the questionnaire, calculation, and details of categorization. The OSDI score will be summarized by treatment





with quantitative descriptive statistics (n, mean, median, standard deviation, 25th quartile, 75th quartile, minimum, and maximum).

10.6 Corneal Fluorescein Staining

Corneal fluorescein staining will be performed and data will be collected at Screening (Visit 1), Week 4 (Visit 4b), and Early Termination (if necessary). Corneal fluorescein staining will be assessed for both the study and fellow eye. Staining will be graded using the National Eye Institute (NEI)/Industry Workshop Scale. Examiners will score each of five areas on the cornea of each eye: 1 – Central; 2 – Superior; 3 – Temporal; 4 – Nasal; 5 – Inferior. A standardized grading system of 0-3 will be used for each of the five areas. The corneal fluorescein staining score will be described by visit, treatment, study eye, and fellow eye with summary statistics. Specifically, scores will be presented by each of the five cornea areas and total scores for all corneal areas.

10.7 Slit Lamp Biomicroscopy

The slit lamp biomicroscopy will be performed at Screening (Visit 1, pre-and post-treatment procedures), Day 7 (Visit 2), Week 2 (Visit 3), Week 4 (Visit 4b, pre-and post-treatment procedures), Week 6 (Visit 5), Week 24 (Visit 6), Week 48 (Visit 7), and Early Termination (if necessary). A slit lamp will be used for external examination and biomicroscopy. The eyelids, cornea, conjunctiva, anterior chamber, iris, and lens will be examined at each visit. Slit lamp biomicroscopy results will be summarized for each treatment group for the study and fellow eye by visit using discrete summary statistics. Abnormal clinically significant findings will be described. Shifts from baseline including normal to abnormal (not clinically significant), and normal to abnormal (clinically significant) will be presented using counts and percentages

11 Intranasal Examination

Intranasal assessments collected at Screening (Visit 1), Day 7 (Visit 2), Week 4 (Visit 4b), and Early Termination (if necessary) will be summarized by treatment group with counts and percentages. Shifts from baseline of normal to abnormal (not clinically significant) and normal to abnormal (clinically significant) will be presented using counts and percentages.

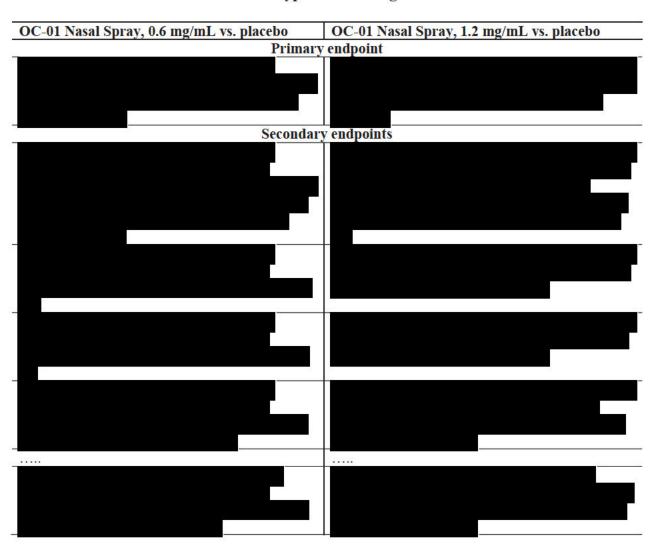




12 Efficacy Analysis



Table 1. Hierarchical order of hypothesis testing







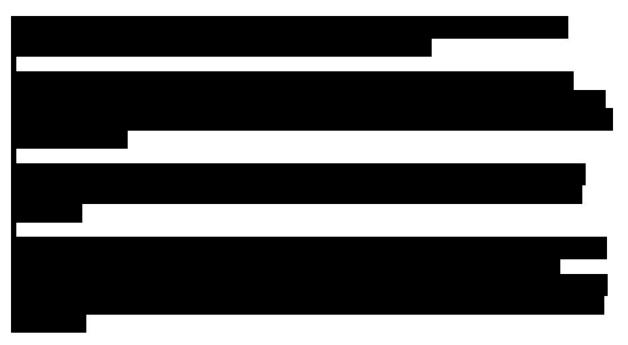
Footnote:

1.





12.1 Primary Endpoint



12.2 Secondary Efficacy Endpoints

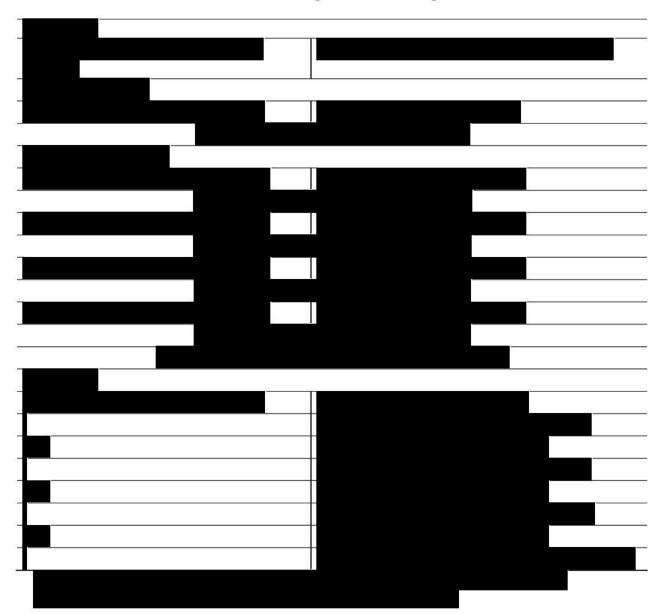








Table 2 Closed Testing Procedure Example







12.3 Exploratory Analyses



12.4 Handling Missing Efficacy Data







13 Safety Analysis

The safety population will be used for all safety analyses. All recorded safety parameters will be listed by treatment, subject ID and visit or visit date.

13.1 Adverse Events

The investigator will promptly review each Adverse Event (AE) for accuracy and completeness, and classify each AE according to its intensity, its relationship to study drug or administration procedure, and its seriousness. AEs will be coded using version 22.0 of the MedDRA dictionary. AEs will be monitored throughout the study and documented on the appropriate AE form. AEs will be categorized as ocular and non-ocular events as well as by system organ class (SOC) and preferred term (PT), seriousness, severity, and relation to study medications.

All treatment-emergent adverse events (TEAEs) will be summarized. A TEAE is defined as an AE that is new or worsened in severity compared to the first dose of study drug. All AEs will be presented in data listing with a flag indicating the event is a TEAE.

TEAEs will be summarized by subject. In addition, the number of TEAE episodes that occurred during the study will be provided in the overall summary of AE table.

The following presentations of TEAEs will be generated:

- Overall adverse events summary (including any TEAEs, ocular TEAEs, resolved ocular TEAEs, non-ocular TEAEs, ocular TEAEs, non-ocular TEAEs, SAEs, treatment- emergent SAEs, treatment-related treatment emergent SAEs, TEAEs by maximum severity, TEAEs by relationship to study drug, AEs leading to treatment/study discontinuation);
- Serious adverse events (SAE) by SOC and PT;
- All ocular TEAEs by SOC and PT;
- All non-ocular TEAEs by SOC and PT;
- TEAEs leading to treatment discontinuation.
- TEAEs leading to study discontinuation.

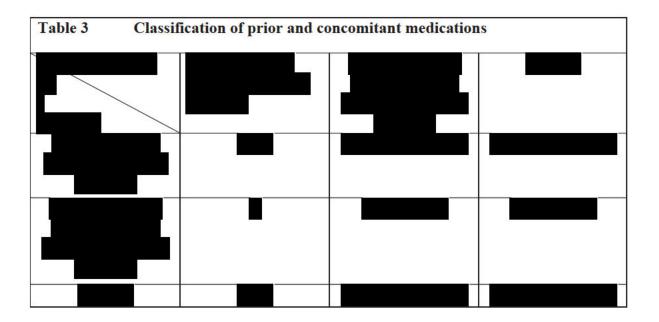




13.2 Prior and Concomitant Medications



Table 3 describes the classification of prior and concomitant medications.







14 Subgroup Analyses







Appendix 1 Schedule of Visits and Measurements

	Screen/	Day	Visit 2	Day	Visit 3	Day		Visit 4		Visit 5	Visit 6	Visit 7	ET
Procedure	Visit 1	2-6	Day 7	8-13	Week 2 Day 14	15-27		Week 4	4	Week 6 Day 42	Week 24	Week 48 Day 336	
			1		Ŧ		Visit 4a	4a	Visit 4b (+3 days of 4a)	#3	Day 168 ±7	47	
							Pre- CAE®	Peri- CAE®	Schirmer's Test Evaluation				
Informed consent/HIPAA	×												
Demographics	×												
Medical history, prior medication(s),	×												
Octuar instory and updates Eligibility criteria	×												
Urine pregnancy test	X			7.			X					X	X
OSDI [©] questionnaire	×												
Eye Dryness Score (EDS)	×		×		×		×	X^4	»X				×
Ocular Discomfort Scale	×						×	X4					
BCVA	X ₂		X		X2		X		X2				×
Slit lamp biomicroscopy	X2		X		X2	4.			X2	X	X	X	X
Corneal fluorescein staining	X								9X				X
Schirmer's test	X ₂				X	33			ςX				
Schirmer's test with cotton swab Stimulation	×												
Intranasal examination	X ₂		X						X2	X	X	×	×
Randomization	X								2				
Administer investigational drug / Placebo	X3	X		X	X3	X		X	£X				
Diary Completion		X	83	×		X							



OYSTER	ਲ⊢												
Dispense investigational drug / placebo	X				X		X						
Concomitant medications	X		X	8.	X		X		X	X	X	X	×
AE Query	X		X		X		X		X	X	X	X	X
X ¹ = For females of childbearing potential; X ² = Pre- and Post-treatment procedures; X ³ = Concurrent with Schirmer's Test; X ⁴ = Procedure started at time 0 and then conducted every 5 minutes thereafter during the 120 minute CAE® exposure; X ⁵ = At Visit 4, Schirmer's Test Evaluation and CAE® procedures should be performed and its window. The Schirmer's Test Evaluation and all assessments should be performed after the CAE® visit assessment. X ^c - Post Treatment Procedures. ET=Early Termination	aring poten e 120 minu and all asse	tial; $X^2 =$ te CAE [®] ssments s	Pre- and Pos exposure; X ² hould be per	t-treatment = At Visit 4 formed afte	procedures; I, Schirmer's r the CAE® v	X ³ = Concu Test Evaluatisit assessm	rrent with Sch ation and CAE tent. X6- Post	irmer's Test * procedures Treatment Pr	; X ⁴ = Procedure s s should be perforn rocedures. ET=Ea	tarted at time (ned on differer trly Terminatio) and then con it days within	ducted every 5 the visit windo	w. The





Appendix 2 Analysis for secondary efficacy endpoints with multiple imputation







1. Exhibit 1. Sample SAS code for assessing missing data patterns









Study OPP-101 SAP Addendum for Efficacy Analysis Based on Impact from COVID-19

The ONSET-2 study has randomized 758 subjects in all. The final group of 103 subjects at three of the 22 clinical centers in the ONSET-2 study (Center 45, 8 subjects; Center 48, 65 subjects, Center 51, 30 subjects) had some missing data for select efficacy endpoints due to the COVID-19 pandemic. These missing data are, from a statistical point of view, "missing at random" because of the COVID-19 pandemic, not the status of their dry eye disease, led to their missing data. We intend to use all available data for the statistical analyses; specifically, we will use data from all of centers for each primary and secondary endpoint where COVID-19 did not impact study visits.

The pandemic had different effects on the three centers: Center 45 was not able to complete Visit 4a; Center 48 was not able to complete Visits 4a and 4b (although was able to collect Corneal Fluorescein Staining as well as EDS symptom data captured remotely); Center 51 was not able to complete Visit 4b (although was able to collect EDS symptom data remotely). Therefore, in Addendum Table 1 below, we display all primary and secondary efficacy endpoints, and for each, its relevant modified ITT population (original ITT population or modified ITT [mITT] population, mITT-1, mITT-2, or mITT-3).

Each of these three modified ITT populations is defined by which centers are excluded because COVID-19 impacted them.



Addendum Table 1: Summary of Efficacy Endpoints and Relevant ITT Population

Endpoint	Endpoints impacted by COVID-19	ITT Population	Site(s) excluded from the population
24 24			