



## CLINICAL STUDY PROTOCOL

**Protocol No:** AVDR 2019-05 (v 1.1)

**Version Date:** May 28<sup>th</sup>, 2020

**Prepared by:** Andre Vision and Device Research

**Title:** Clinical Performance of Qualis Silicone Hydrogel Soft Contact Lens over 3 Months of Daily Wear


**Sponsor:** UNICON OPTICAL CO., LTD.  
No.16, Gongye E. 9th Rd.  
Hsinchu Science Park,  
Baoshan Township Hsinchu County Hsinchu - District,  
TAIWAN 30075

**CRO:** Andre Vision and Device Research  
6119 Canter Ln.  
West Linn, OR 97068  
United States

## PROTOCOL APPROVAL

The signatures below indicate that the Sponsor and CRO have reviewed the current version of this protocol and agree to its content.

Andre Vision and Device Research Representative

Bret Andre  6/10/2020  
(Printed Name) (Signature) (Date)

Sponsor Representative

Jesse Peng  6/10, 2020  
(Printed Name) (Signature) (Date)

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## Protocol Revision History

Revision	Description of Revision(s)	Date
1.1	<p>Added Section 6.4.2 and Section 6.4.4 - The study procedures are revised to optionally allow remote reporting for subject questionnaires (vision/comfort/wear time/symptoms), reporting of adverse events, and changes in medication and health history. Additionally, the informed consent process is revised to allow for electronic distribution of the informed consent form to potential participants and remote review of the consent form with designated study personnel.</p> <p>Updated content on the baseline, follow up and adverse event eCRFs (Appendix 3) – updated “recent lens wearing experience” questions on baseline eCRF. Added “wetting drop usage” question to follow up eCRF. Added documentation of additional information for the Adverse Event eCRF.</p>	May 28 <sup>th</sup> , 2020
1.2		

## Abbreviations Referenced in Protocol

AE	Adverse Event
BCVA	Best Corrected Visual Acuity
BSCVA	Best Spectacle Corrected Visual Acuity
CFR	Code of Federal Regulations
CRF	Case Report Form
CRO	Contract Research Organization
D	Diopter
SLF	Slit Lamp Finding
FDA	U.S. Food & Drug Administration
GCP	Good Clinical Practices
ICF	Informed Consent Form
ID	Identification
IDE	Investigation Device Exception
IRB	Institutional Review Board
ISO	International Standards Organization
INC	Incorporated
LogMAR	Logarithmic Minimal Angle of Resolution
n	Number of observations
N/A	Not Applicable
OTC	Over the Counter
QA	Quality Assurance
Rx	Medical Prescription
SD	Standard Deviation
UADE	Unanticipated Adverse Device Effect
UCVA	Uncorrected Visual Acuity
VA	Visual Acuity

## 1. GENERAL INFORMATION

### 1.1. INTRODUCTION

The objective of this clinical investigation is to collect scientifically valid safety and effectiveness data on the Qualis Silicone Hydrogel Soft Contact Lens over 3 months of daily wear. The clinical performance data reported from this study are intended to be submitted to the U.S. Food and Drug Administration Center for Devices and Radiological Health (CDRH) to establish substantial equivalence to a currently marketed contact lens in support of a new 510(k) premarket notification application.

Silicone hydrogel contact lenses are a unique category of soft (hydrophilic) contact lenses that contain a gel-like plastic materials called Silicone. Similar to standard hydrogel soft lenses, these are made of a plastic material which hardens when dried out but actively absorbs water to become soft and pliable again. The primary benefit of silicone hydrogel materials is increased oxygen transmissibility versus standard hydrogel contact lenses. The clinical effects of wearing contact lenses that limit oxygen supply have been extensively reported—with potential complications related to hypoxia including corneal swelling, epithelial microcysts, limbal hyperemia, corneal vascularization, refractive error changes and corneal distortion.<sup>1</sup>

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<sup>1</sup> Fonn, Desmond; Sweeney, Deborah. The Benefits of Silicone Hydrogel Daily Disposable Lenses. Contact Lens Spectrum, Volume: 30, Issue: December 2015, page(s): 42-45



**1.2. IDENTIFICATION OF THE CLINICAL INVESTIGATIONAL PLAN**

**Title:** Clinical Performance of Qualis Silicone Hydrogel Soft Contact Lens over 3 Months of Daily Wear

**Protocol No:** AVDR 2019-05

**Protocol Version:** 1.0

**Protocol Version Date:** February 20<sup>th</sup>, 2020

**1.3. SPONSOR**

**Sponsor:** UNICON OPTICAL CO., LTD.  
No.16, Gongye E. 9th Rd.  
Hsinchu Science Park,  
Baoshan Township Hsinchu County Hsinchu - District,  
TAIWAN 30075  
Email: [celine.hsu@uniconvision.com.tw](mailto:celine.hsu@uniconvision.com.tw)  
Contact: Celine Hsu

**CRO:** Andre Vision and Device Research  
6119 Canter Lane  
West Linn, OR 97068  
United States  
Telephone: 1-(503)-372-5226  
Email: [bandre@fdapproval.com](mailto:bandre@fdapproval.com)  
Contact: Bret Andre, MS

**Lead Clinical Monitor:** Mijeong Andre, MS  
6119 Canter Lane  
West Linn, OR 97068  
United States  
Telephone: 1-(503)-372-5226

**Medical Monitor:** Dr. Larry Rich M.D.  
14170 N.W. Bordeaux Lane  
Portland, Oregon 97229  
503-614-8604  
[imaricci1@gmail.com](mailto:imaricci1@gmail.com)

**1.4. PRINCIPAL INVESTIGATOR(S) AND INVESTIGATIONAL SITE(S)****Refer to Appendix 1****1.5. OVERALL SYNOPSIS OF THE CLINICAL INVESTIGATION**

<b>Protocol Title:</b>	Clinical Performance of Qualis Silicone Hydrogel Soft Contact Lens over 3 Months of Daily Wear
<b>Objective(s):</b>	The objective of this clinical investigation is to collect scientifically valid safety and effectiveness data on the Qualis Silicone Hydrogel Soft Contact Lens for Daily Wear. The clinical performance data reported from this study is intended to be submitted to the U.S. Food and Drug Administration Center for Devices and Radiological Health (CDRH) to establish substantial equivalence to a currently marketed contact lens in support of a new 510(k) premarket notification application.
<b>Overall Study Design:</b>	Three-month, open-label, bilateral, parallel group, randomized, daily wear contact lens dispensing study comparing the Qualis Silicone Hydrogel Soft Contact Lens for Daily Wear with the currently marketed Acuvue Vita (senofilcon C) Monthly Contact Lens (FDA cleared under K160212). Eligible subjects will be examined for baseline evaluation and lens fitting. Up to fifty (50) subjects will wear the test contact lenses and up to twenty-five (25) subjects will wear the control contact lenses. The subjects will undergo standard ophthalmic evaluation for contact lens wear and will be followed for a period of at least ninety (91) days.
<b>Duration:</b>	For each subject, the study will involve a minimum of six (6) scheduled visits. The total duration of the treatment period will be at least ninety-one (91) days from lens dispensing.
<b>Test Device:</b>	<ul style="list-style-type: none"> <li>- <b>Test Device Name:</b> Qualis Silicone Hydrogel Soft Contact Lens</li> <li>- <b>Water Content:</b> 38%</li> <li>- <b>Dk:</b> <math>100 \times 10^{-11}</math> (cm<sup>2</sup>/sec)(mlO<sub>2</sub>/ml-mmHg)</li> <li>- <b>Additives:</b> C.I. Reactive Blue No. 19 (listed in 21 CFR Part 73.3127); benzotriazole UV absorbing monomer</li> <li>- <b>Packaging:</b> Lenses are supplied sterile in sealed blister packs containing sterile isotonic phosphate buffered saline.</li> </ul>
<b>Control Device:</b>	<ul style="list-style-type: none"> <li>- <b>Control Device Name:</b> Acuvue Vita (senofilcon C) Monthly Contact Lens</li> <li>- <b>Water Content:</b> 41%</li> <li>- <b>Dk:</b> <math>103 \times 10^{-11}</math> (cm<sup>2</sup>/sec)(mlO<sub>2</sub>/ml-mmHg)</li> <li>- <b>Additives:</b> Reactive Blue Dye #4; benzotriazole UV absorbing monomer</li> <li>- <b>Packaging:</b> The lens is supplied sterile (steam) in a foil sealed plastic package stored in buffered saline solution with methyl ether cellulose.</li> </ul>
<b>Care Solutions:</b>	The Subjects will be using FDA cleared contact lens care products that are commercially available for silicone hydrogel daily lens maintenance, care and storage. To disinfect the contact lenses daily, Biotrue MPS and Alcon ClearCare Peroxide will be used. A randomization scheme will be provided to the investigational site to randomly assign subjects to one of the two lens care system (Biotrue or ClearCare) in a 1:1 manner. PuriLens Plus Preservative Free Saline will be supplied to subjects for use as needed in conjunction with the daily disinfection system.

<b>Summary of Visit Schedule:</b>	<p>There will be a total of six (6) scheduled study visits*:</p> <p>Visit 1: Screening/Enrolment/Baseline/Lens Dispensing</p> <p>Visit 2: Day 7 (5 to 9 days after dispensing)</p> <p>Visit 3: Day 14 (12 to 16 days after dispensing)</p> <p>Visit 4: Day 30 (25 to 35 days after dispensing)</p> <p>Visit 5: Day 60 (55 to 65 days after dispensing)</p> <p>Visit 6: Day 91 (91 to 101 days after dispensing)</p> <p>* Interim visits to be undertaken as required</p>
<b>Number of Subjects:</b>	<p>To ensure a minimum of 50 completed subjects (with 30 completed subjects in the test arm), 75 subjects will be enrolled to participate. Up to fifty (50) subjects will wear the test contact lenses and up to twenty-five (25) subjects will wear the control contact lenses.</p> <p>The number of subjects was determined based on the recommendations in <i>Premarket Notification [510(k)] Guidance Document for Class II Daily Wear Contact Lenses</i>.</p>
<b>Number of Sites:</b>	<p>A minimum of three (3) sites and five (5) independent investigators will participate in this clinical study. The target subject enrollment at each study site will be equivalent.</p>
<b>Inclusion Criteria:</b>	<p>Prior to being considered eligible to participate in this study, each subject MUST meet the following criteria:</p> <ul style="list-style-type: none"> <li>• The subject must read, understand, and sign the informed consent form and receive a fully executed copy of the form.</li> <li>• The subject must appear able and willing to adhere to the instructions set forth in this clinical protocol.</li> <li>• The subject must be at least 18 years of age.</li> <li>• The subject's vertex corrected spherical equivalent distance refraction must be in the range of -1.00 to -6.00 in each eye.</li> <li>• The subject's refractive cylinder must be <math>\leq 0.75</math> Diopters in each eye.</li> <li>• The subject must have best corrected visual acuity of 20/25 (LogMAR) or better in each eye.</li> <li>• Subjects should own a wearable pair of spectacles.</li> <li>• The subject must have normal eyes (i.e., no ocular medications or infections of any type).</li> <li>• Subjects must be able and willing to wear the study lenses at least 6 hours a day, a minimum of 5 days per week</li> </ul>
<b>Exclusion Criteria:</b>	<p>Subjects may not be enrolled into the study if ANY of the following apply:</p> <ul style="list-style-type: none"> <li>• Currently pregnant or lactating (subjects who become pregnant during the study will be discontinued).</li> <li>• Any systemic disease, autoimmune disease, or use of medication, which may interfere with contact lens wear. This may include, but not be limited to, diabetes, hyperthyroidism, recurrent herpes simplex/zoster, Sjögren's syndrome, xerophthalmia, acne rosacea, Stevens-Johnson syndrome, and immunosuppressive diseases or any infectious diseases (e.g. hepatitis, tuberculosis).</li> </ul>

	<ul style="list-style-type: none"> <li>• The use of systemic or ocular medications that would contraindicate contact lens wear.</li> <li>• Entropion, ectropion, extrusions, chalazia, recurrent styes, glaucoma, history of recurrent corneal erosions, aphakia, or moderate or above corneal distortion by keratometry.</li> <li>• Any previous, or planned, ocular or interocular surgery (e.g., radial keratotomy, photorefractive keratectomy (PRK), laser in situ keratomileusis (LASIK), etc.).</li> <li>• Any grade 2 or greater slit lamp findings for corneal staining, and any grade 3 or greater slit lamp findings for other abnormalities (e.g., edema, corneal neovascularization, tarsal abnormalities, conjunctival injection) on the ISO 11980 classification scale, any current inflammatory events or events within the last 6 months, or any other ocular abnormality that may contraindicate contact lens wear.</li> <li>• Any known hypersensitivity or allergic reaction to Biotrue or ClearCare contact lens care solutions</li> <li>• Any ocular infection, allergy or clinically significant ocular disease (e.g. corneal edema, uveitis, severe keratoconjunctivitis sicca, ocular hypertension), or ocular conditions (e.g. strabismus), which might interfere with the study.</li> <li>• Any corneal distortion resulting from previous hard or rigid gas permeable contact lens wear.</li> <li>• Extended wear, monovision or multi-focal contact lens correction.</li> <li>• Participation in any contact lens or lens care product clinical trial within 30 days prior to study enrollment.</li> <li>• Any subject where the randomized lens demonstrates a fit that is deemed inappropriate by the investigator, including, but not limited to, the lens being too flat, too steep, have excessive or inadequate movement, and/or insufficient limbal coverage.</li> <li>• Employee or relative of employees of sponsor or investigational clinic (e.g., Investigator, Coordinator, Technician)</li> </ul>
<b>Evaluation Criteria</b>	
<b>Primary Outcome Measures:</b>	<ol style="list-style-type: none"> <li>1. Ocular adverse events/adverse reactions, and adverse device effects;</li> <li>2. Visual Acuity</li> </ol>
<b>Secondary Outcome Measures:</b>	<ol style="list-style-type: none"> <li>1. Keratometry changes/Refractive Changes;</li> <li>2. Discontinuations (and their reasons);</li> <li>3. Lens Replacements (and their reasons);</li> <li>4. Device Deficiencies;</li> <li>5. Ocular symptoms, problems and complaints;</li> <li>6. Average lens wear time</li> </ol>
<b>Protection of Human Rights:</b>	This non-significant risk contact lens trial requires approval by an institutional review board (IRB) prior to commencement.

## 2. IDENTIFICATION AND DESCRIPTION OF THE INVESTIGATIONAL DEVICE

### 2.1. INVESTIGATIONAL DEVICE

The Qualis Silicone Hydrogel Soft Contact Lens is a class II (FDA Group V – Silicone Hydrogel) daily wear soft contact lens in a spherical design that is characterized by a high oxygen permeability (Dk). The water content is 38%. The hydrogel lens' material is a random copolymer composed of Silicone Hydrogel. A benzotriazole UV absorbing monomer is used to block UV radiation. UV absorbers on the lens block UV radiation. Qualis Silicone Hydrogel Soft Contact Lens is tinted with color additive C.I. Reactive Blue No. 19 listed in 21 CFR Part 73.3127 for handling visibility purpose. The transmittance characteristics are less than 5% in the UVB range of 280-315nm and less than 30% in the UVA range of 316-380nm.

Lenses are supplied sterile in sealed blister packs containing sterile isotonic phosphate buffered saline. The compatibility and package integrity of the blister pack packaging system has been demonstrated and successfully used for other marketed lens products, and packaged lenses are effectively steam sterilized in a validated autoclave. Blister pack container is labeled with the lens parameters, lot number and product expiration date.

The Qualis Silicone Hydrogel Soft Contact Lens is available in the following parameters:

Table #1 - Qualis Silicone Hydrogel Soft Contact Lens Parameters

Items	Parameters
Material	Silicone Hydrogel
Diameter Range	13.5 mm to 15.0 mm
Base curve Range	8.0 mm to 9.5 mm
Center Thickness	0.080 mm at -3.00D
Power	+20.00D to -20.00D in 0.25D per step

The properties of the Qualis Silicone Hydrogel Soft Contact Lens are as follows:

Table #2 - Qualis Silicone Hydrogel Soft Contact Lens Properties

Lens Property	Test Value
Light transmittance	95%
UV transmittance	@280~315 nm: Avg<5% @316~380 nm: Avg<30%
Refractive index	1.415
Water content	38%
Oxygen permeability (DK, 35°C)	$100 \times 10^{-11} \text{ (cm}^2\text{/sec)(mlO}_2\text{/mlmmHg)}$

The Qualis Silicone Hydrogel Soft Contact Lens is manufactured at the following facility:

UNICON Optical Co., LTD.  
No 16, Gongye E. 9th Rd., Hsinchu Science Park,  
Baoshan Township, Hsinchu County 30075,  
Taiwan (R.O.C.)

### 3. JUSTIFICATION FOR THE DESIGN OF THE CLINICAL INVESTIGATION

The risk-benefit profile for soft (hydrophilic) daily wear contact lenses is well established through currently marketed devices. This clinical investigation plan was designed based on the FDA guidance titled *Premarket Notification [510(k)] Guidance Document for Class II Daily Wear Contact Lenses*, and *ISO 11980:2009(E) – Ophthalmic optics - contact lenses and contact lens care products - guidance for clinical investigations*.

## 4. RISKS AND BENEFITS

### 4.1. BENEFITS

There might not be direct benefits to the participants in this study. However, participation in a study may contribute to scientific research information that may be used in the development of new contact lens products. In addition, subjects will receive an examination of the front part of their eyes and may have the opportunity to try different types of soft contact lenses at no cost to them.

### 4.2. RISKS

Daily wear contact lenses studies are considered to be a non-significant risk studies based on United States Food and Drug administration (FDA)<sup>2</sup> and International Standards Organization (ISO) guidelines. The investigational contact lenses used in this study are intended for daily wear with usage consistent with typical daily wear.

All the assessments are routine clinical procedures, and none present any increased risk to subjects compared with normal clinical routine for eye examination and contact lens care.

The risks associated with wearing the study contact lenses are similar to wearing any type of commercially available soft (hydrophilic) silicone hydrogel contact lens. These include discomfort during adaptation period, eye irritation, pain, redness and swelling; a painful scrape or scratch on the surface of the clear part of the eye; blurred vision and sensation of dry eyes. More serious risks may include photophobia, iritis, corneal edema or eye infection. Although contact lens-related infections are very infrequent, they may occur. The incidence of infection due to daily wear lenses is relatively very low<sup>3</sup>. Almost always an infection will occur only in one eye. This risk is assumed by more than 130 million current contact lens wearers worldwide. Since some subjects will be current contact lens wearers, the risks of taking part in the study are no greater than those associated with wearing their own contact lenses.

Complications may occur due to non-compliant behavior. This will be mitigated by the investigator providing the subject with indications for use for both the lens and lens care product prior to dispensing and by the greater follow-up visit frequency associated with the study than routine practice that will allow the investigator to re-enforce the importance of following a compliant behavior.

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<sup>2</sup> FDA Guidance Significant Risk and Nonsignificant Risk Medical Device Studies UCM126418

<sup>3</sup> Schein, O. D., et al. (1989). "The relative risk of ulcerative keratitis among users of daily-wear and extended-wear soft contact lenses. A case-control study. Microbial Keratitis Study Group." New England Journal of Medicine 321(12): 773-778.

## 5. OBJECTIVES AND HYPOTHESIS OF THE CLINICAL INVESTIGATION

The objective of this clinical investigation is to collect scientifically valid safety and effectiveness data on the Qualis Silicone Hydrogel Soft Contact Lens for Daily Wear. The clinical performance data reported from this study is intended to be submitted to the U.S. Food and Drug Administration Center for Devices and Radiological Health (CDRH) to establish substantial equivalence to a currently marketed contact lens in support of a new 510(k) premarket notification application.

## 6. DESIGN OF THE CLINICAL INVESTIGATION

### 6.1. GENERAL

#### 6.1.1. Study Design

This is a three-month, open-label, bilateral, parallel group, randomized, daily wear contact lens dispensing study comparing the Qualis Silicone Hydrogel Soft Contact Lens for Daily Wear with the currently marketed Acuvue Vita (senofilcon C) Monthly Contact Lens (FDA cleared under K160212). Eligible subjects will be examined for baseline evaluation and lens fitting. Up to fifty (50) subjects will wear the test contact lenses and up to twenty-five (25) subjects will wear the control contact lenses. The subjects will undergo standard ophthalmic evaluation for contact lens wear and will be followed for a period of ninety days.

#### 6.1.2. Measures Taken to Avoid Bias

The assignment to the test or control contact lens and to the lens care system will be randomized to minimize bias. The target subject enrollment will be equivalent for each study site to account for assignment bias.

#### 6.1.3. Study Endpoints

##### *Primary Outcome Measures:*

- Ocular adverse events/adverse reactions, and adverse device effects;
- Visual acuity

##### *Secondary Outcome Measures:*

- Keratometry changes/Refractive Changes;
- Discontinuations (and their reasons);
- Lens Replacements (and their reasons);
- Device Deficiencies;
- Ocular symptoms, problems and complaints;
- Average lens wear time



#### **6.1.4. Schedule of Visits and Clinical Parameters**

This study will involve a total of six (6) scheduled study visits\*:

- Visit 1: Screening/Enrolment/Lens Dispensing
- Visit 2: Day 7 (5 to 9 days after dispensing)
- Visit 3: Day 14 (12 to 16 days after dispensing)
- Visit 4: Day 30 (25 to 35 days after dispensing)
- Visit 5: Day 60 (55 to 65 days after dispensing)
- Visit 6: Day 91 (91 to 101 days after dispensing)

\*Interim visits to be undertaken as required

Refer to the following page for a table depicting the clinical parameters at each scheduled visit.

Table #3 - Schedule of Visits and Clinical Parameters

Procedure / Data	Visit 1 Screening/ Enrolment/B aseline/ Dispense	Visit 2, 3 Day 7, 14 Follow Up	Visit 4, 5 Day 30, 60 Follow Up	Visit 6 Day 91 Final Visit	Interim (as required)
Visit window	N/A	+/- 2days	+/- 5 days	+10 days	N/A
Informed consent <sup>2</sup>	✓	-	-	-	-
Randomization (assign subject ID)	✓	-	-	-	-
Demographics	✓	-	-	-	-
Brief Medical History (including medication) <sup>3</sup>	✓	✓ <sup>1</sup>	✓ <sup>1</sup>	✓ <sup>1</sup>	✓ <sup>1</sup>
Habitual correction information	✓	-	-	-	-
Average wear and comfort time <sup>3</sup>	✓	✓	✓	✓	(✓)
Sphero-cylindrical and Best sphere refraction	✓	✓	✓	✓	(✓)
Visual acuity with spectacle refraction (Sphero-cylindrical & best sphere) (monocular and binocular)	✓	✓	✓	✓	(✓)
Keratometry	✓	✓	✓	✓	(✓)
Biomicroscopy	✓	✓	✓	✓	(✓)
Verify Inclusion/exclusion criteria	✓	-	-	-	-
Dispense Test or Control Device	✓	(✓)	✓	(✓)	(✓)
Contact lens use and care instruction	✓	-	-	-	-
Visual acuity with dispensed contact lenses	✓	✓	✓	✓	(✓)
Spherical over-refraction (with visual acuity)	✓	✓	✓	✓	(✓)
Evaluate lens fit & surface	✓	✓	✓	✓	(✓)
Comfort, vision, and handling questionnaires <sup>3</sup>	✓	✓	✓	✓	(✓)
Symptom questionnaires <sup>3</sup>	✓	✓	✓	✓	(✓)
Device deficiency reporting	(✓)	(✓)	(✓)	(✓)	(✓)
Adverse event reporting <sup>4</sup>	(✓)	(✓)	(✓)	(✓)	(✓)
Protocol deviation reporting	(✓)	(✓)	(✓)	(✓)	(✓)
Scheduling <sup>3</sup>	✓	✓	✓	✓	(✓)
Trial exit form	(✓)	(✓)	(✓)	✓	(✓)

✓ = mandatory, (✓) = as applicable for visit

<sup>1</sup> Monitor changes only<sup>2</sup> Informed Consent form may be electronically distributed (i.e. email or fax) to potential participants and reviewed remotely. Remote Informed Consent signatures (e.g. DocuSign) may be available at some sites. Refer to Section 6.4.2.<sup>3</sup> Study procedure may be conducted remotely. Refer to Section 6.4.4.<sup>4</sup> Any adverse reactions or complications observed by the investigator or reported by the subjects throughout the study will be recorded in the subject's Adverse Event Case Report Form.

### **6.1.5. Equipment for Assessing Clinical Investigation Variables**

This investigation will require equipment used for a typical soft contact lens fitting examination, including:

- Phoropter
- Slit Lamp
- Keratometer
- Visual acuity chart (LogMAR)

### **6.1.6. Replacement of Subjects**

To ensure a minimum of 50 completed subjects (with 30 completed subjects in the test arm), 75 subjects will be enrolled to participate. Subjects that have dropped out of the study will not be replaced.

### **6.1.7. Investigational Site Selection and Investigator Qualification Criteria**

The study site will be selected based on the experience of the site investigator and staff in conducting clinical research trials, the availability of potential study subjects, and the interest of the site in performing the trial.

The trial will be conducted at a minimum of three (3) sites with at least five (5) independent investigators. Principal Investigators for this trial will be licensed optometrists or ophthalmologists with experience in clinical research, and the remaining Sub-Investigators may be optometrists or ophthalmologists trained in contact lens fitting. For Principal Investigators that are optometrists, an ophthalmology clinic or hospital in near proximity to the clinical site location will be predesignated for treatment of serious adverse events. Principal Investigators and Sub-Investigators must provide a curriculum vitae reflecting experience in contact lens fitting. Any decisions or actions related to potential adverse events must be addressed by the Principal Investigators.

### **6.1.8. Clinical Trial Registration**

The study will be registered in the clinical trials registry ([www.ClinicalTrials.gov](http://www.ClinicalTrials.gov))

## **6.2. INVESTIGATIONAL DEVICE AND COMPARATORS**

### **6.2.1. Investigational Device**

The investigational device is the Qualis Silicone Hydrogel Soft Contact Lens manufactured from a novel silicone hydrogel material. Refer to section 2.1 of this clinical investigation plan for more detailed information regarding the investigational device.

### 6.2.2. Comparator (Control Device)

This study will report the primary outcome measures in summary tables compared against the Acuvue Vita (senofilcon C) Monthly Contact Lens, which is FDA 510(k) cleared under K160212. The control device has the following attributes:

- **Water Content:** 41%
- **Dk:** 103 x 10<sup>-11</sup> (cm<sup>2</sup>/sec)(mlO<sub>2</sub>/ml-mmHg)
- **Additives:** Reactive Blue Dye #4; benzotriazole UV absorbing monomer
- **Packaging:** The lens is supplied sterile (steam) in a foil sealed plastic package stored in buffered saline solution with methyl ether cellulose.

### 6.2.3. Additional Care Products

The Subjects will be using FDA cleared contact lens care products that are commercially available for silicone hydrogel daily lens maintenance, care and storage. To disinfect the contact lenses daily, Biotrue MPS and Alcon Clear Care Peroxide will be used. A randomization scheme will be provided to the investigational site to randomly assign subjects to one of the two lens care system (Biotrue or Clear Care) in a 1:1 manner. The lens care system will be supplied with a contact lens storage case. PuriLens Plus Preservative Free Saline will be supplied to subjects for use as needed in conjunction with the daily disinfection system.

Table #4 – Care Products

Care system	Manufacturers	Composition	Description of use	FDA 510(k) Clearance
Biotrue MPS	Bausch + Lomb	polyaminopropyl biguanide 0.00013% and polyquaternium 0.0001%.	To condition, clean, remove daily protein, disinfect, and store lenses	K161819
Clear Care	Alcon	Preservative free hydrogen peroxide 3%, PLURONIC† 17R4 (a cleaning agent), and HydraGlyde* Moisture Matrix (EOBO-21* – polyoxyethylene-polyoxybutylene, for silicone hydrogel soft lenses	To condition, clean, remove daily protein, disinfect, and store lenses	K173538
PuriLens Plus Preservative Free Saline	PuriLens, Inc.	preservative-free, pH balanced, isotonic, sterile saline solution	for use in rinsing, cleaning and disinfection, and storage of SOFT (hydrophilic) contact lenses.	K002319

### 6.3. SUBJECTS

To be eligible for the study subjects must be at least 18 years old. There are no requirements as to race, gender or occupation. Participants who have the ability to freely consent to participate in the study, are capable of comprehending the nature of the study, and are likely to comply with the visit schedule are to be entered into the study provided they conform to the following criteria. **To be eligible to participate in the study a subject must have ALL of the Inclusion Criteria and have NONE of the exclusion criteria present.**

#### 6.3.1. Inclusion Criteria

Prior to being considered eligible to participate in this study, each subject **MUST** meet the following criteria:

- The subject must read, understand, and sign the informed consent form and receive a fully executed copy of the form.
- The subject must appear able and willing to adhere to the instructions set forth in this clinical protocol.
- The subject must be at least 18 years of age.
- The subject's vertex corrected spherical equivalent distance refraction must be in the range of -1.00 to -6.00 in each eye.
- The subject's refractive cylinder must be  $\leq 0.75$  Diopters in each eye.
- The subject must have best corrected visual acuity of 20/25 (LogMAR) or better in each eye.
- Subjects should own a wearable pair of spectacles.
- The subject must have normal eyes (i.e., no ocular medications or infections of any type).
- Subjects must be able and willing to wear the study lenses at least 6 hours a day, a minimum of 5 days per week

#### 6.3.2. Exclusion Criteria

Subjects may not be enrolled into the study if ANY of the following apply:

- Currently pregnant or lactating (subjects who become pregnant during the study will be discontinued).
- Any systemic disease, autoimmune disease, or use of medication, which may interfere with contact lens wear. This may include, but not be limited to, diabetes, hyperthyroidism, recurrent herpes simplex/zoster, Sjögren's syndrome, xerophthalmia, acne rosacea, Stevens-Johnson syndrome, and immunosuppressive diseases or any infectious diseases (e.g. hepatitis, tuberculosis).
- The use of systemic or ocular medications that would contraindicate contact lens wear.

- Entropion, ectropion, extrusions, chalazia, recurrent styes, glaucoma, history of recurrent corneal erosions, aphakia, or moderate or above corneal distortion by keratometry.
- Any previous, or planned, ocular or interocular surgery (e.g., radial keratotomy, photorefractive keratectomy (PRK), laser in situ keratomileusis (LASIK), etc.).
- Any grade 2 or greater slit lamp findings for corneal staining, and any grade 3 or greater slit lamp findings for other abnormalities (e.g., edema, corneal neovascularization, tarsal abnormalities, conjunctival injection) on the ISO 11980 classification scale, any current inflammatory events or events within the last 6 months, or any other ocular abnormality that may contraindicate contact lens wear.
- Any known hypersensitivity or allergic reaction to Biotrue or ClearCare contact lens care solutions
- Any ocular infection, allergy or clinically significant ocular disease (e.g. corneal edema, uveitis, severe keratoconjunctivitis sicca, ocular hypertension), or ocular conditions (e.g. strabismus), which might interfere with the study.
- Any corneal distortion resulting from previous hard or rigid gas permeable contact lens wear.
- Extended wear, monovision or multi-focal contact lens correction.
- Participation in any contact lens or lens care product clinical trial within 30 days prior to study enrollment.
- Any subject where the randomized lens demonstrates a fit that is deemed inappropriate by the investigator, including, but not limited to, the lens being too flat, too steep, have excessive or inadequate movement, and/or insufficient limbal coverage.
- Employee or relative of employees of sponsor or investigational clinic (e.g., Investigator, Coordinator, Technician)

### **6.3.3. Subject Withdrawal or Discontinuation**

Refer to section 6.4.6 for information regarding subject withdrawal or discontinuation.

### **6.3.4. Point of Enrollment**

The investigational site will screen subjects to determine if each subject is eligible to participate in the investigation. Pre-screening of basic eligibility may occur prior to the initial visit; however, Subjects are required to complete the informed consent process prior to the baseline/screening visit (Visit 1). All subjects who sign an Informed Consent form and meet the eligibility criteria during the screening visit are defined as “enrolled” into the clinical investigation regardless of any further participation.

### **6.3.5. Duration of the Clinical Investigation**

The total duration of treatment will be at least 91 days from lens dispensing for each individual subject.

### **6.3.6. Number of Subjects Required**

To ensure a minimum of 50 completed subjects (with 30 completed subjects in the test arm), 75 subjects will be enrolled to participate. Up to fifty (50) subjects will wear the test contact lenses and up to twenty-five (25) subjects will wear the control contact lenses.

The number of subjects was determined based on the recommendations in *Premarket Notification [510(k)] Guidance Document for Class II Daily Wear Contact Lenses*.

### **6.3.7. Enrolment Period**

The estimated enrolment period for this investigation is forty-five (45) days.

### **6.3.8. Subject Payment**

Subjects in will be paid a specified amount in return for their time and travel to the clinic to attend the six (6) scheduled study visits. If participation ends prior to completing all study visits, this payment will be prorated accordingly. If interim or additional visits are required, the subject will receive an additional \$50 USD per visit.

## **6.4. PROCEDURES**

### **6.4.1. Enrolment Procedures**

Each subject who is considered for the investigation must be presented with the Informed Consent document and must read the document or have the document read to them. The investigator or an authorized, delegated member of the investigational staff will explain the study purpose, procedures, and subject responsibilities to the potential participant. Subjects will be informed that their participation is voluntary and that they may withdraw consent to participate at any time. They will be informed that choosing not to participate will not affect the care the subject will receive. Finally, they will be told that if needed their records may be accessed by the health (regulatory) authorities, the IRB, and authorized sponsor and CRO staff without violating the confidentiality of the subject, to the extent permitted by the applicable law(s) or regulations. The subjects' willingness and ability to meet the follow-up requirements will be determined. The subject will be given sufficient time to read the informed consent form and

the opportunity to ask questions. The subject will sign and date the informed consent form. The investigator will also sign and date the consent form. The original informed consent form will be retained with the subject records and a copy will be provided to the subject. An Affidavit of Informed Consent will be completed for the clinical monitor to confirm that consent was obtained.

#### **6.4.2. Remote Enrolment Procedures**

The Informed Consent form may be electronically distributed (i.e. email or fax) to potential participants, and the investigator or delegated study personnel may remotely review the Informed Consent form content and address initial questions via phone or video conferencing (e.g. Zoom). Remote Informed Consent review is optional to investigators and subjects and is supplemental to the in-person informed consent process. In all cases an in-person review of the Informed Consent form, as described in the above enrolment procedures, must occur at the scheduled in-person screening visit. Each investigational site will determine if the Informed Consent signing may be conducted remotely using electronic signature (e.g. DocuSign), or if all Informed Consent forms shall be signed during the in-person screening visit.

#### **6.4.3. Study Procedures**

At the first visit after informed consent has been given, the investigator will review the subject's medical history, ocular history (including concomitant treatments), demographics and contact lens wear history. The subject will complete a baseline symptoms questionnaire. A series of routine optometric assessments and tests will be conducted to evaluate the subject's ocular health and refractive status. This will include measurement of manifest sphero-cylindrical refraction, best sphere refraction and resultant visual acuity, keratometry, and biomicroscopy (slit-lamp examination). Once it has been verified that the subject meets the inclusion / exclusion criteria the test lens parameters will be determined based on Rx. The lens parameters will be recorded, and the subject will be randomized to receive the test or control lenses, which will be dispensed from a stock at the site. After insertion of the study lenses the fit and visual acuity will be evaluated and an over-refraction with visual acuity will be performed. The subject will be educated on safe contact lens use, and will be instructed to wear the study lenses on a one-month replacement schedule for at least 6 hours a day for a minimum of 5 days per week. The subject will be provided with Biotrue or ClearCare for routine cleaning, disinfection and storage; and will be educated on the daily care regimen for the study lenses. At the conclusion of the visit, follow-up visits will be scheduled.

There will be five scheduled follow-up visits during the treatment period at the following intervals: 7 days, 14 days, 30 days, 60 days, and 91 days. During these follow-up visits any changes to medical history will be reviewed, the subject will complete a symptom questionnaire, and a series of routine optometric assessments



and tests will be conducted to evaluate the subject's ocular health and refractive status. This will include measurement of manifest sphero-cylindrical refraction, best sphere refraction and resultant visual acuity, visual acuity with contact lens, over-refraction with visual acuity, and biomicroscopy (slit-lamp examination) including evaluation of the fit and surface of the study lens. Additionally, on the 91 day visit keratometry will be recorded. At the conclusion of each visit, the subject will be instructed to continue to wear and care for the study lenses, and the next follow-up visit will be scheduled. Additional supply of study lenses and care solution will be dispensed on Day 30 and Day 60 visits (or as needed). At the completion of the 91 day visit the subject will be discharged from the study and a Trial Exit Form will be completed.

#### **6.4.4. Remote Study Procedures**

With consideration for the current global pandemic (COVID-19), the follow-up study visit procedures listed below may be conducted remotely (via telephone or video conference) and recorded on the eCRF to reduce physical exposure time between the subjects and study personnel:

- Questionnaires (vision/comfort/handling/wear time/symptoms)
- Changes in medication (concomitant treatments) and health history
- Scheduling

All remote reporting of questionnaires must occur on the same calendar day of the scheduled in-person visit and must be prior to the visit. Scheduling may occur remotely at any time between visits. Any eligible procedures not conducted remotely prior to the visit shall be conducted during the in-person visit. If remote reporting was conducted and the subject is not present for the in-person visit on the same calendar day, then the completed procedures shall be reported again on the date of the actual in-person visit. The utilization of remote reporting procedures in this study is optional to investigators and subjects.

All other study visit procedures not identified in this section (6.4.4) or section 6.4.2 shall be conducted with the subject physically present during the in-person clinic visit.

#### **6.4.5. Subject Instructions**

The subjects will be provided with a patient instruction guide for the Qualis Silicone Hydrogel Soft Contact Lens. All study contact lens care solutions and control contact lenses will be dispensed with a package insert/patient instructions.

#### **6.4.6. Examination Schedule**

There will be a total of six (6) scheduled study visits:

Visit 1: Screening/Enrolment/Baseline/Lens Dispensing  
Visit 2: Day 7 (5 to 9 days after dispensing)  
Visit 3: Day 14 (12 to 16 days after dispensing)  
Visit 4: Day 30 (25 to 35 days after dispensing)  
Visit 5: Day 60 (55 to 65 days after dispensing)  
Visit 6: Day 91/Study Exit (91 to 101 days after dispensing)

#### **6.4.7. Clinical Parameters**

All procedures for the study are routine procedures that are performed as part of standard clinical care.

#### **Visit 1: Screening/Enrollment/Baseline/Lens Dispense**

Investigators will adhere to the following routine:

- Explanation of the study\*
- Signing of the consent form\*
- Assignment of the subject identification number
- Demographics and ocular history questionnaire
- Concomitant treatments
- Habitual contact lens wearing history
- Comfort, vision, and handling questionnaire
- Symptoms questionnaire
- Manifest sphero-cylindrical and best sphere refraction
- Visual acuity (LogMAR) with spectacle refraction
- Keratometry
- Slit lamp biomicroscopy examination to evaluate ocular integrity (limbal redness, bulbar redness, corneal staining, corneal infiltrates, other findings; GPC, vascularization, edema/striae, microcysts, pinguecula, etc.)
- Review of inclusion and exclusion criteria / eligibility determination
- For subjects that fail to meet enrolment criteria, document the screening failure
- For subjects that meet the study criteria document their enrolment, assign a subject ID, and apply the subject ID to the Subject Randomization List. Determine the applicable contact lens power based on Rx and dispense lenses.

~ **INSERT** study lenses and wait 5 minutes~

- Visual acuity (LogMAR) and over-refraction with dispensed contact lenses
- Slit lamp evaluation for contact lens fit and contact lens surface quality

- Instruction on contact lens care and use
- Adverse event identification and reporting
- Device deficiency reporting
- Protocol deviation reporting
- Schedule follow up visit(s)\*

\* May be completed remotely.

**Visit 2, 3, 4, and 5: Follow Up Visit – Day 7, Day 14, Day 30, and Day 60.**

Investigators will adhere to the following routine:

*~ subject is instructed to wear study lenses at the visit ~*

- Update medical history/concomitant treatments questionnaire\*
- Comfort, vision, and handling questionnaire\*
- Symptoms questionnaire\*
- Visual acuity (LogMAR) and over-refraction with dispensed contact lenses
- Slit lamp evaluation for contact lens fit and contact lens surface quality

*~ REMOVE study lenses~*

- Slit lamp biomicroscopy examination to evaluate ocular integrity (limbal redness, bulbar redness, corneal staining, corneal infiltrates, other findings; GPC, vascularization, edema/striae, microcysts, pinguecula, etc.)
- Manifest sphero-cylindrical and best sphere refraction
- Visual acuity (LogMAR) with spectacle refraction
- Keratometry
- Adverse event identification and reporting
- Device deficiency reporting
- Protocol deviation reporting
- Additional supply of one-month study lenses dispensed (Day 30 and Day 60 visits)
- Additional care product dispensed as needed
- Schedule follow up visit(s)\*
- For discontinued subjects, complete Exit Form and collect all study lenses from the subjects then discharge subjects from the study

\* May be completed remotely.

**Visit 6: Follow Up Visit – Day 91 – Final Treatment/Exit Visit**

Investigators will adhere to the following routine:

*~ subject is instructed to wear study lenses at the visit ~*

- Update medical history/concomitant treatments questionnaire\*
- Comfort, vision, and handling questionnaire\*
- Symptoms questionnaire\*
- Visual acuity (LogMAR) and over-refraction with dispensed contact lenses
- Slit lamp evaluation for contact lens fit and contact lens surface quality

*~ REMOVE study lenses~*

- Slit lamp biomicroscopy examination to evaluate ocular integrity (limbal redness, bulbar redness, corneal staining, corneal infiltrates, other findings; GPC, vascularization, edema/striae, microcysts, pinguecula, etc.)
- Manifest sphero-cylindrical and best sphere refraction
- Visual acuity (LogMAR) with spectacle refraction
- Keratometry
- Adverse event identification and reporting
- Device deficiency reporting
- Protocol deviation reporting
- Collect all study lenses from the subjects
- Complete Exit Form and discharge subjects from the study

\* May be completed remotely.

Refer to the table in section 6.1.4 for the clinical parameters and testing frequency.

Some procedures (e.g. keratometry, questionnaires) may be performed independently by office technicians / clinical research associates or optometrists under the investigator's supervision, after training into the protocol and qualification, using methods described in Appendix 2. When possible, each subject's measurements will be performed by the same operator or technician, using the same piece of equipment at the site.

Additional examinations (such as photography etc.) may be conducted if deemed appropriate.

## Interim Visits

Subjects may return for interim visits between scheduled visits as necessary. The Follow Up Visit Form should be completed for all interim visits (specify “unscheduled visit” on the eCRF).

- Adverse Event Related Interim Visits: when a potentially significant adverse event occurs the Investigator should schedule frequent follow up to monitor and thoroughly document the duration of the event. The Clinical Monitor or Medical Monitor should be consulted when determining a follow up schedule to the adverse event.
- Loss of BCVA: in the case of a specific event where the subject’s visual acuity is reduced by  $\geq 10$  letters (LogMAR), a follow up visit should be scheduled within 3 days of the event. If the visual acuity loss persists at follow up, ongoing follow up visits should be scheduled within 3 days until the visual acuity loss has resolved or the Investigator determines the condition is stable.
- Lost or broken lenses: in the case where the subject requires replacement of a lost or broken lens an interim visit will be scheduled and the following procedures will be conducted at the visit (and recorded on the follow up visit eCRF):
  - o Visual acuity (LogMAR) and over-refraction with dispensed contact lenses
  - o Slit lamp evaluation for contact lens fit and contact lens surface quality
  - o Adverse event identification and reporting
  - o Device deficiency reporting
  - o Protocol deviation reporting

### 6.4.8. Study Completion Procedures

A study exit form must be completed for all subjects.

#### ***Subject Completion:***

Subjects are considered to have completed the study if they have completed follow-up examinations through the 91-day study period and when all of the study procedures have been completed. All completed subjects’ data will be considered evaluable unless a significant protocol deviation was reported. Written justification will be required for the use of data in the evaluation of the safety and/or efficacy of study product from any subject found to have a protocol deviation.

#### ***Subject Discontinuation:***

Possible reasons for discontinuation include:

1. Screen Failure – the subject does not meet the protocol specified inclusion criteria or has one or more of the exclusion criteria present.
2. Adverse Event – the subject has been reported to have an adverse event and was discontinued due to the adverse event.
3. Subject Decision – the subject decides for whatever reason to exit from the study. The reason must be recorded in the comments section of the Exit Form.
4. Investigator, Sponsor or IRB Decision – the subject is exited from the study based on a decision by the investigator the Sponsor or the reviewing IRB. The reason for discontinuation must be recorded in the comments section of the Exit Form.
5. Protocol Violation – the subject or the investigator is repeatedly found to be in violation of the study protocol.

Subjects may be discontinued from the study at the discretion of the investigator only for reasons related to the study treatment regimen that would jeopardize the subjects' health and/or welfare if they were to continue in the study.

Discontinued subjects will be considered to have completed the study and should not be replaced. However, every effort will be made to follow discontinued subjects to obtain as much follow-up data as possible regarding the subject's current visual status until the planned end of the study period.

NOTE: The Investigator will immediately (within 2 working days) notify Monitor/CRO if a subject discontinues from the study.

***Subjects Lost to Follow-up:***

Subjects may be lost to follow-up from the study for non-treatment related reasons. Reasons for loss to follow-up include, but are not necessarily limited to:

- 1) voluntary withdrawal from the study by the subject;
- 2) subject has moved from the area; or
- 3) subject is unwilling or unable to return for follow-up.

The reason for loss to follow-up will be recorded on the appropriate case report form. Every effort should be made to contact the subject in an effort either to get the subject back into compliance with the protocol or to obtain as much follow-up data as possible regarding the subject's current refractive status and ocular health.

***Data to be collected:***

Visual acuity and slit lamp examination should be completed for each subject at the time of discontinuation.

***Any follow-up required:***

Subjects who are to be exited from the study for an adverse event must be followed until the condition has resolved, returned to pre-study status or warrants no further follow-up before being discontinued from the study.

Unscheduled visits must be conducted until the condition has resolved, returned to pre-study status or warrants no further follow-up.

If the resolution has not occurred within 6 weeks after the study end-date, the subject will be exited from the study but must continue to be followed by the investigator until the condition has resolved, returned to pre-study status or warrants no further follow-up.

***Medical Care Post Study Completion:***

No continuing medical care will be provided for subjects after completion except for the care required to follow-up and resolve a device related adverse event that started during the study.

**6.5. MONITORING PLAN**

Andre Vision and Device Research will monitor the investigation pursuant to ISO 14155:2011, any applicable health authority regulations and the clinical research procedures adopted by the CRO. The clinical monitor will maintain close contact with the Investigators and the Study Coordinators. The Investigator will permit CRO representatives direct access to source data/documents for study-related monitoring, audits, review, and inspection(s). The monitor's responsibilities will include:

- Ensuring that the investigation is being conducted according to the protocol;
- Ensuring the rights and wellbeing of subjects are protected;
- Ensuring that protocol deviations are documented with corrective action plans, as applicable;
- Clarifying questions regarding the study;
- Resolving study issues or problems that may arise;
- Reviewing the study records to ensure completeness and accuracy. Study and patient source document records reviewed will include:
  - o The Information and Consent Form
  - o Source documentation including consenting, medical history, concomitant medications, and adverse event information as applicable.
  - o Study related regulatory documents

Study monitoring will involve the following elements:

- CRO representatives will meet with the investigator(s) and conduct a site visit prior to the enrollment of subjects at the site in order to review the adequacy of the subject population, facilities, and equipment with respect to the needs of the study and to train the investigator to the clinical investigation plan.
- On an ongoing basis CRO representatives will remotely monitor study records and data.
- CRO representatives may visit the clinical site during the study (interim visit) to review study progress and verify source documents if needed.
- Telephone/email consultation will occur as necessary during the course of the investigation to ensure the proper progress and documentation of the study findings.
- CRO representatives will meet with the investigator(s) at the completion of the investigation in order to verify accuracy of data to source documents (when applicable), complete disposition of study materials, and study close out activities.

## 7. STATISTICAL CONSIDERATIONS

The CRO will manage data analysis and reporting. Subject characteristics and study conduct summaries will be reported—including tables such as a subject disposition table, demographics and baseline characteristics tables (including age, gender, baseline refraction, lens wear experience), summary table of screen failures by reason, accountability of eyes enrolled, and subjects excluded from key analysis sets.

All descriptive summary statistics will be displayed with n and % for categorical data, and with mean, standard deviation, median, minimum, and maximum for continuous data. The unit will be eye. Tables will be presented by treatment and overall. Slit lamp findings will be presented by all study visits, tabulated by eyes and incidence rate for completed test lens group, completed control lens group, discontinued test lens group and discontinued control eyes group. Primary and secondary outcomes will be analyzed by descriptive statistics only. As such, there are no statistical hypotheses to be tested.

Trend analysis profile will be provided following directions provided in the FDA guidance *Premarket Notification [510(k)] Guidance Document for Class II Daily Wear Contact Lenses*. All participants who meet the eligibility criteria, adhere to the protocol, and successfully complete the full study assessment will be available for the per-protocol analysis. Subjects with missing data will be included in the analysis unless there is some non-response-related reason to exclude them, such as a protocol violation/invalid data. Data from all enrolled subjects will be used for reporting of adverse events or other safety related outcomes.



## 8. DATA MANAGEMENT

The clinical data will be recorded directly on electronic case report forms (eCRFs) generated using Andre Vision and Device Research eClinical Software. All data captured with this software will be stored using the secure Amazon Web Services Cloud.

The eCRFs constitute the subjects' original source documents, which will be reviewed for accuracy and comprehensiveness by the study monitor once completed and signed by the investigator. The content and structure of the eCRFs are compliant with 21 CFR Part 11.

### ***Electronic Case Report Forms (eCRF):***

Electronic Case Report Forms (eCRF) access will be made available to the sites. A sample of the case report forms are found in Appendix 3. Only designated individuals will receive a user account to access and complete the eCRFs. Upon completion, the independent investigator will electronically sign the eCRF. Upon completion, the subject identifiers will be recorded on the eCRFs beyond subject number and demographic information.

If any study information is collected using an automated piece of equipment, and if the automated instrument has a printed output, the printed output will be kept in the subject's clinical file as a source document with the subject number and the date of recording noted on the printout.

The eCRFs are time stamped with full audit trail for any changes made. In the event of a query being raised by the Clinical Monitor, a data flag will be raised for the investigator to review. Complete tracking information containing the change, the person making the change, the date and time of the change and the reason for the change are to be documented on the eCRF Correction Log.

### ***Additional Source Documents:***

Adequate original records will be maintained for the study, including subject medical records (if used), data collection forms, worksheets, exam printouts, investigator/tech notes, signed informed consent forms, device use records, adverse event documentation, and information regarding subjects who discontinue.

### ***Records Retention:***

The investigator will maintain the following accurate, complete, and current records relating to the investigator's participation in this study:

- All correspondence with another investigator, the IRB, CRO, the study monitor, and regulatory bodies
- Records of receipt, use or disposition of the investigational device
- Records of each subject's case history and exposure to the investigational device

The investigator will maintain these records during the investigation and for a period of seven (7) years after the date on which the investigation is terminated or completed.

## **9. AMENDMENTS TO THE CLINICAL INVESTIGATIONAL PLAN**

The Sponsor, CRO, or Investigators may determine that an amendment to the clinical investigational plan is necessary following IRB and IDE approval. When the Sponsor and Investigators have agreed to the amended investigational plan, it will be submitted to the IRB and FDA (via IDE supplement) for approval. Investigators may not follow the amended protocol until receiving approval letters for the IRB and FDA unless the changes affect the subjects' rights, safety and wellbeing, or the scientific integrity of the clinical investigation. If the changes are minor (such as a technical change related to subject scheduling), amendment may be applied with a "note-to-file" in lieu of submitting a supplement to the IDE. All amendments, including minor amendments, will be submitted to the IRB for approval prior to implementation.

In the event that the clinical investigational plan has been amended, all Investigators and coordinators involved in the study will be trained to the new procedures prior to implementation.

## **10. DEVIATIONS FROM THE CLINICAL INVESTIGATIONAL PLAN**

Protocol deviations are unanticipated or unintentional changes to a study after it has received prior sponsor and IRB approval. Protocol deviations can be major or minor. All protocol deviations must be reported on the Protocol Deviation Form eCRF. If the deviation affects subject's rights, safety and wellbeing, or the scientific integrity of the clinical investigation, the IRB must be contacted with requests for deviations, and reports of deviations. Under emergency circumstances, deviations from the clinical investigational plan to protect the rights, safety and well-being of subjects may proceed without prior approval of the sponsor and the IRB. Such deviations shall be documented and reported to the sponsor and the IRB as soon as possible.

Throughout the course of the study the Clinical Monitor will review study data for subject and investigator compliance to the protocol. Non-compliances will be documented as protocol deviation(s). If a deviation is determined to be major, the deviation will be reported to the IRB as per reporting requirements.

### ***Major Protocol Deviations:***

Major protocol deviations may impact the research protocol, information consent document or other study materials, usually cannot be anticipated ahead of time and are often necessary to ensure the safety and welfare of the subjects.

The following are examples of protocol deviations that must be reported to the IRB:

- Changes in procedures initiated to eliminate immediate risks/hazards to subjects;

- Enrolment of subjects outside the protocol inclusion/exclusion criteria whether agreed to or not by the sponsor;
- Inadvertent deviation in specific research intervention procedures or timing of the research intervention which could impact upon the safety or efficacy of the study-related intervention or upon the experimental design;
- Information consent documentation violations: no documentation of informed consent; incorrect version of, or incomplete, informed consent documentation used.

***Minor Protocol Deviations:***

Protocol deviations caused by or which originate with research subjects are generally considered minor, and normally are not reported to the IRB unless these results in increased risk to the subjects).

The following are examples of protocol deviations that are considered minor and do not require reporting to the IRB:

- Logistical or administrative aspects of the study (e.g., study subject missed appointment, change in appointment date);
- Inadvertent deviation in specific research intervention procedures or timing of the research intervention which would *not* impact upon the safety or efficacy of the study-related intervention or upon the experimental design (e.g., missing a measurement during a session that is not considered critical for the study).

**11. DEVICE ACCOUNTABILITY**

Access to investigational devices will be controlled and the investigational devices are to be used only in the clinical investigation. All study products will be stored in a secure environment at room temperature. Access is to be limited to key study personnel. No investigational device will be released until the investigator has received IRB approval to conduct the study. Once released to the investigator, all investigational device inventories will be monitored and accounted for throughout the course of the study.

The Sponsor will maintain records that documents the physical location of all investigational devices from shipment of investigational devices to the investigation sites until return or disposal. The Investigator will maintain the Study Product Shipment Receipt Log and Dispensing and Accountability Logs. These records include:

- the date of receipt,
- identification of each investigational device (batch number/serial number or unique code),
- the expiry date (if applicable),
- the date or dates of use,
- subject identification,
- date on which the investigational device was returned/explanted from subject and
- the date of return of unused, expired or malfunctioning investigational devices.

The clinical monitor will ensure product is reconciled and any discrepancies are investigated and either corrected or documented. At the conclusion of the study all investigational devices will be reconciled. Once the reconciliation of all devices has been documented by the clinical monitor, the remaining collected devices will be disposed using municipal services.

### ***Investigational Device Packaging and Labeling:***

The investigational test contact lenses will be supplied sterile in sealed blister packs containing isotonic phosphate buffered saline. The package labeling is printed with lot numbering, expiration date and lens parameter identification.

The lenses will be shipped to all study sites with an open label. An invoice with ‘Caution – Investigational Device Limited by Federal (or US) Law to Investigational Use, and ‘to be used by Qualified Investigators only’ will be included with the lenses.

Neither CRO nor the investigator may represent the investigational test device as safe or effective for the purpose for which it is under clinical study or otherwise promote the product.

## **12. STATEMENTS OF COMPLIANCE**

This clinical investigation will be conducted in substantial conformance with the ethical principles of the Declaration of Helsinki and the following regulations and standards:

- 21 CFR Part 812 Investigational Device Exemptions
- 21 CFR Part 11 Electronic records; Electronic Signatures
- ISO 14155 Clinical investigation of medical devices for human subjects: Clinical investigation plans (2011).
- 21 CFR Part 50 Protection of Human Subjects
- 21 CFR Part 54 Financial Disclosure by Clinical Investigators
- 21 CFR Part 56 Institutional Review Boards

The following documents were referenced for the development of this study protocol:

- US FDA/CDRH. Premarket Notification [510(k)] Guidance Document for Class II Daily Wear Contact Lenses
- ISO 11980:2009(E) – Ophthalmic optics - contact lenses and contact lens care products - guidance for clinical investigations.

Pursuant to the abbreviated Investigational Device Exemption (IDE) requirements under 21 CFR 812.2, this is a non-significant risk daily wear contact lens investigation that requires approval by an institutional review board (IRB) prior to commencement.

### **13. INFORMED CONSENT PROCESS**

Written informed consent will be obtained from all potential subjects prior to any study specific procedures. The study will be explained to the prospective subject by the investigator, sub-investigator, or designated study staff. The nature of the investigational device will be explained together with the potential hazards, including any possible adverse events. If s/he agrees to participate, the subject will sign and date the informed consent form. The investigator will also sign and date the consent form. The original informed consent form will be retained with the subject records and a copy will be provided to the subject. An Affidavit of Informed Consent will be completed as part of the baseline electronic case report form to document that consent was obtained. Refer to Section 6.4.2 for a description of the aspects of the informed consent process that may be conducted remotely at the discretion of the investigator and potential subject.

In no circumstance will the subject be exposed to the investigational device or study products prior to signing the Informed Consent Form and passing the screening inclusion/exclusion criteria.

This clinical investigation does not involve emergency treatments and informed consent will not be accepted through a legally authorized representative.

### **14. ADVERSE EVENTS, ADVERSE DEVICE EFFECTS AND DEVICE DEFICIENCIES**

Throughout the course of the proposed study, all efforts will be made to remain alert to possible adverse reactions or untoward findings. If adverse reactions occur, the first concern will be the safety and welfare of the subject and appropriate medical intervention will be made. Any adverse reactions or complications observed by the investigator or reported by the subjects will be recorded in the appropriate section of the subject's Case Report Form.

Any serious adverse event and/or severe, sight-threatening adverse event will be promptly communicated by telephone to CRO, the Medical Monitor, and to the IRB. These reports must be confirmed in writing within five (5) working days of the occurrence.

Any subjects who are terminated from the study due to adverse events will be followed until their medical outcome is determined and the Investigator will provide written reports to CRO as appropriate.

#### ***Definition and Classification of Adverse Events:***

Definition and classification of adverse reactions in this study will follow the requirements outlined in US FDA/CDRH Guidance Document for Class II Daily Wear Contact Lenses. (1994) Parts 3 and 4 Clinical Section -Appendix B and C page 45-96, and ISO 11980:2009

Ophthalmic optics -- Contact lenses and contact lens care products -- Guidance for clinical investigations.

**Adverse Reaction:** Considered to include but not limited to a hazardous, sight threatening condition such as corneal ulcers, severe corneal abrasion > 2mm in diameter, iritis, other ocular infections or inflammations, corneal scarring or permanent loss of vision

**Slit Lam Finding (SLF) Requiring Treatment:** Any slit lamp finding in any examination, scheduled or unscheduled that requires treatment including temporary discontinuation of lens wear, to maintain normal ocular health. This does not include SLFs that are corrected by refitting of lenses without discontinuation of wear or by retraining patients in proper lens care.

**Symptom, Problem or Complaint (SPC) Requiring Treatment:** Any symptom, problem or complaint that requires treatment including temporary discontinuation of lens wear, to maintain normal ocular health. This does not include SPCs that are corrected by refitting of lenses without discontinuation of wear or by retraining patients in proper lens care.

In general, an ‘adverse event’ refers to any undesirable clinical occurrence in a subject, whether it is considered to be device-related or not. Adverse events (AE) may be classified as ‘serious adverse events’ or ‘significant adverse events’ as defined below.

<u>Classification</u>	<u>Definition and condition</u>	<u>Reporting</u>
Serious Adverse Events	<p>Serious AEs are those events that result in, or have potential to cause, either permanent impairment of an ocular function or damage to an ocular structure, and may necessitate medical or surgical intervention.</p> <p>Serious AEs may include any hazardous, sight-threatening conditions occurring after exposure to test article, including but not limited to the following.</p> <p>a) A presumed infectious ulcer (defined as a progressive erosion of the corneal tissue). Signs may include irregular focal infiltrates (&gt; 1 mm); active lesions with raised edges; significant diffuse infiltration; anterior corneal to mid-stromal involvement; erosion with overlying staining; conjunctival and lid edema; anterior chamber reaction (iritis); severe bulbar and limbal redness. Symptoms associated with a presumed infectious ulcer (microbial keratitis) may include pain of rapid onset; severe redness; purulent or mucopurulent discharge; tearing; photophobia. For the purposes of reporting, a corneal ulcer which has any of the following characteristics should be considered in this category:</p> <ol style="list-style-type: none"> <li>1) central or paracentral location;</li> <li>2) penetration of Bowman’s membrane;</li> <li>3) infiltrate &gt; 2 mm diameter;</li> <li>4) associated with iritis ≥ grade 2;</li> <li>5) associated with any increase in intraocular pressure;</li> <li>6) culture positive for microorganisms;</li> <li>7) increasing size or severity at subsequent visits.</li> </ol> <p>b) Any central or paracentral corneal event (such as vascularization) that results in permanent opacification.</p> <p>c) Any serious adverse ophthalmic events including hypopyon and hyphema.</p> <p>d) Any neovascularization within the central 6 mm of the cornea.</p> <p>e) The loss of two or more lines of visual acuity that fail to resolve.</p> <p>f) All cases of iritis.</p>	<p>Notify sponsor as soon as possible, <b>within 24 hrs</b>; IRB and FDA reporting as per requirements</p>

<u>Significant but non-serious adverse events</u>	Significant but non-serious AEs should include, but not be limited to: — peripheral non-progressive non-infectious ulcers; — all symptomatic corneal infiltrative events; — all cases of corneal staining greater than or equal to grade 3; — a temporary loss of two or more lines of best corrected visual acuity (for greater than or equal to 2 weeks); — cases greater than or equal to grade 2 neovascularization; — any ocular event that necessitates temporary lens discontinuation of greater than or equal to 2 weeks; — lens adhesion or lens binding to the cornea; — significantly distorted corneal topography (significant distortion of keratometry mires or aberrant findings in corneal topography); — any ocular AE that requires the practitioner's intervention, including medication (not including minimal lubrication).	Notify sponsor as soon as possible, <b>within 5 working days</b> ; IRB and FDA reporting as per requirements
Unanticipated Adverse Device Effect	Unanticipated adverse device effect means any serious adverse effect on health or safety or any life-threatening problem or death caused by, or associated with, a device, if that effect, problem, or death was not previously identified in nature, severity, or degree of incidence in the investigational plan or application (including a supplementary plan or application), or any other unanticipated serious problem associated with a device that relates to the rights, safety, or welfare of subjects.	Notify sponsor <b>immediately</b> ; IRB and FDA reporting as per requirements

### ***Procedures for Handling Adverse Events:***

Treatment of an adverse event will depend on its nature and severity. Based on the clinical judgment of the investigator, the subject may be referred to a pre-designated ophthalmologist for treatment. The investigator will attempt to determine whether the reaction is related to the contact lenses or a result of other factors. An Adverse Event Form will be completed for each adverse event. If both eyes are involved, each eye will be counted as one adverse event and Adverse Event information will be completed *for each eye*. Whenever possible, the adverse event will be photo-documented.

In any case of a corneal infiltrate with overlying full thickness epithelial loss, or in any case of presumed corneal keratitis a culture will be taken in accordance with the procedures identified in *Premarket Notification [510(k)] Guidance Document for Class II Daily Wear Contact Lenses*, which may be referenced in Appendix 4 of this protocol. The investigator will immediately (same business day) report cases that require culturing to the Medical Monitor and CRO.

Expenses incurred for medical treatment as part of study participation will be paid by the sponsor (bills and prescription receipts kept). The subject must be followed until resolution and a written report completed indicating the subsequent treatment and resolution of the condition.

### ***Procedures for Reporting Adverse Events:***

All serious and Unanticipated Adverse Device Effects that are related or possibly related to participation will be reported to the Principal Investigator and the sponsor within 24 hours of the investigator becoming aware of the event. The Principal Investigator will report the event

to the Institutional Review Board (IRB) as soon as possible, but in no event later than 10 working days after the investigator first learns of the event (21 CFR 812.150(a)(1)). All fatal or life-threatening events will be reported immediately to the IRB.

The CRO/Sponsor will immediately conduct an evaluation of an UADE and will report the results of the evaluation to FDA, all reviewing IRBs, and participating investigators within 10 working days after the sponsor first receives notice of the effect (21 CFR 812.46(b), 812.150(b)(1)).

All adverse events—including non-serious adverse events that are not related to the device—will be documented and submitted by the investigator on the Adverse Event Form. In the final clinical report for this study all adverse events, regardless of classification (i.e. non-device related, serious, significant, and non-significant), will be reported.

#### ***Medical Monitor Responsibilities:***

The Medical Monitor will be a physician specializing in optometry or ophthalmology. To reduce study bias concerns, the Medical Monitor will not have any real or potential conflict of interest with the Sponsor, Study Investigator or participating Investigative site.

The primary purpose of the Medical Monitor is to ensure an independent review all Serious Adverse Events (SAE), device-related Adverse Events and AE related to the safety endpoints. When reviewing SAE and device-related adverse events, the Medical Monitor will report the relationship between the AE and the study device and the study procedure. The results of all events reviewed by the Medical Monitor will be documented.

The Medical Monitor will be Dr. Larry Rich, who is contracted by Andre Vision and Device Research for this activity.

#### ***Device Deficiencies:***

A device deficiency is an inadequacy of a medical device with respect to its identity, quality, durability, reliability, safety or performance. All device deficiencies related to the identity, quality, durability, reliability, safety or performance of an investigational medical device is documented throughout the clinical investigation on the Device Deficiency Form (eCRF). All device deficiencies will be reviewed by the Clinical Monitor. If it is determined by the Clinical Monitor and Medical Monitor that the deficiency could have led to a serious adverse device effect, the event will be reported to the IRB as soon as possible, but in no event later than 10 working days after the investigator first learns of the event.

### **15. VULNERABLE POPULATION**

No vulnerable populations will be included in this investigation.



## 16. SUSPENSION OR PREMATURE TERMINATION OF THE CLINICAL INVESTIGATION

The Sponsor, the IRB or the governing regulatory agency can suspend or terminate the study prior to completion for reasons of safety or failure of the product to demonstrate efficacy.

If the decision is made to discontinue the study, the site will be notified to perform a final study examination and complete study exit forms and documentation.

## 17. PUBLICATION POLICY

The investigational site participating in the study may not report on the study results until the study has been completed and all data verified. The Sponsor reserves the right to review and comment on any presentation, publication or other written or oral communication prior to publication or presentation.

### *Confidentiality Statement:*

This study is confidential in nature. All information gathered during this study is proprietary and should be made available only to those directly involved in the study, when necessary.

Authorized recipients of these data include:

- Investigator and sub-investigator(s)
- Other allied health care personnel necessary for the conduct of the study
- Institutional Review Board personnel
- CRO (Sponsor)
- Designated Study Monitor
- FDA or other government regulatory agencies

All above personnel who are provided with data concerning this study will be informed of its confidential and proprietary nature.

Release of this data (through presentation, publication or other written or oral communication) to other than the above listed personnel requires the prior written permission from the study Sponsor. Study investigators and all office personnel are prohibited from acknowledging participation in the study to individuals and organizations except those listed above. This includes sales representatives and other departments and/or subsidiaries of the parent company of the Sponsor without direct written permission of the Sponsor.

## 18. BIBLIOGRAPHY

[none]

## **Appendix 1**

### **Clinical Sites and Investigators List**

Site	Address	Principal Investigators
#1 – State University of New York (SUNY)	35 State Street, Albany, New York 12207	Dr. Azinda Morrow
#2 – The Ohio State University (tOSU)	338 West 10th Avenue, Columbus, OH 43210	Dr. Jennifer Fogt
#3 – Ala Moana Advanced Eye Clinic	1441 Kapiolani Blvd Ste 2005, Honolulu, HI 96814	Dr. Randall Sakamoto

## **Appendix 2 – Methods of Measurements**

### **Subjective Distance Refractions**

The manifest subjective refraction will be performed at all study visits using phoropter. Wavefront/retinoscopy/autorefractometer result can be used as a starting point for subjective refraction. It is essential that a standard procedure be used to obtain manifest refraction.

### **Visual Acuity Measurement**

It is essential that a standard procedure be used to obtain visual acuity measurements at all study visits. Visual Acuity will be measured using distance high contrast ETDRS charts under high illumination and recorded in LogMAR. For the final report, data will be presented in both in LogMAR and 20/XX grouping as per guidance document.

Visual Acuity with Spectacle Refraction –

- Best Corrected Visual Acuity (BCVA) will be performed with manifest spherical-cylinder refraction by the Investigator. High contrast ETDRS VA chart with phoropter will be used for this procedure.
- Visual Acuity with Best Sphere Refraction – Testing will be done with High contrast ETDRS VA chart and phoropter.

Visual Acuity with Study Lenses – Testing should be done one eye at a time, starting with the right eye first, then the left eye with and without over-refraction.

### **Slit Lamp Examination – Ocular**

Slit lamp examination will be performed at all study visits. Use diffuse illumination to start with followed by direct illumination using either optic section or parallel piped as required.

For corneal evaluation, the assessment will be done without contact lenses.

### **Edema**

Edema will be recorded on a 5-point scale as follows:

#### **i. Epithelial Edema**

0 = none	No epithelial or sub-epithelial haziness. Normal transparency
1 = trace	Barely discernible localized epithelial or subepithelial haziness
2 = mild	Faint but definite localized or generalized haziness
3 = moderate	Significant localized or generalized haziness
4 = severe	Definite widespread, epithelial cloudiness giving dull glass appearance to cornea, or numerous coalescent bullae (note the number and location of bullae)

## ii. Epithelial Microcysts

0 = none	No microcysts
1 = trace	1 to 20 microcysts
2 = mild	21 to 50 microcysts
3 = moderate	51 to 100 microcysts
4 = severe	> 100 microcysts or bullae

Note for the presence/absence of fluid-filled or debris-filled cysts

numbers: \_\_\_\_\_ location: \_\_\_\_\_

## iii. Stromal Edema

0 = none	No stromal cloudiness. Normal transparency
1 = trace	Barely discernible localized stromal cloudiness
2 = mild	Faint but definite localized or generalized stromal cloudiness, 2 or fewer corneal striae
3 = moderate	Significant localized or generalized stromal cloudiness, 3 pronounced corneal striae
4 = severe	Definite widespread, stromal cloudiness, folds in Descemet's membrane and $\geq 4$ pronounced striae

**Corneal Infiltrates**

The severity of corneal infiltrates will be recorded on a 5-point scale as follows:

## Corneal Infiltrates Severity Grading Scale

0 = none	no infiltrates
1 = trace	single or multiple epithelial infiltrates < 1 mm in diameter
2 = mild	Single or multiple epithelial infiltrates $\geq 1$ mm and < 2 mm in diameter
3 = moderate	Multiple infiltrates $\geq 2$ mm and < 3 mm in diameter
4 = severe	Multiple dense infiltrates $\geq 3$ mm in diameter

Outcomes Classification for Corneal Infiltrates will be recorded on a 5-point level as follows:

## Corneal Infiltrates Classification Level

Level 1	High probability of microbial keratitis attributed to contact lens wear with loss of vision and/or surgical intervention attributed to event
Level 2	High probability of microbial keratitis attributed to contact lens wear without loss of vision or surgical intervention attributed to event
Level 3	High probability of infiltrative keratitis of indeterminate etiology attributed to contact lens wear without loss of vision or surgical intervention attributed to event
Level 4	High probability of sterile infiltrative keratitis attributed to contact lens wear without loss of vision or surgical intervention attributed to event
Level 5	High probability of infiltrative keratitis not attributed to contact lens wear
Definitions for classification	
Loss of vision	Defined as loss of 2 lines of corrected acuity in affected eye. Change in best spectacle-corrected visual acuity will be used for affected eyes having this data available at baseline and follow-up. Change from baseline to final soft contact lens-corrected acuity will be used if spectacle-corrected data unavailable.
Surgical intervention	Defined as any laser or incisional technique used to restore vision or prevent additional complications or any application of tissue adhesive to treat impending/actual perforation of the cornea.
High probability of microbial keratitis	One or more corneal stromal infiltrates greater than 1mm in size with pain more than mild and one or more of following: anterior chamber reaction more than minimal; mucopurulent discharge; positive corneal culture. The presence of a subsequent corneal scar is a requirement in cases in which adequate follow-up data and medical records are available.
High probability of infiltrative keratitis of indeterminate etiology	One or more corneal stromal infiltrates accompanied by signs/symptoms not clearly meeting criteria for the sterile or microbial groups.

High probability of sterile infiltrative keratitis	One or more corneal stromal infiltrates the largest of which is 1mm or less in size, and all of the following: outside central 6mm; minimal or no anterior chamber reaction, no mucopurulent discharge; mild or no pain.
----------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

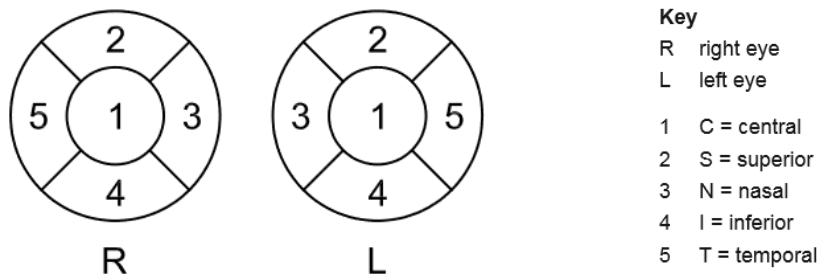
The location of infiltrates observed should be recorded in source documents as indicated in Figure 5-1, using numbers for corneal quadrants. Depth of corneal infiltrates should be abbreviated as follows:

E = epithelial, AS = anterior stromal, P = mid/posterior stromal

In addition, the “Infiltrates” form in electronic data capture (EDC) system should be completed including:

- Eye (OD, OS)
- Location (Central, Peripheral)
- If peripheral, location of infiltrates (superior, inferior, nasal, temporal)
- Type (focal, diffuse)
- Depth of largest infiltrate (epithelial, anterior stromal, mid/posterior stromal)
- Number of infiltrates
- Size of the largest infiltrate (in mm)

#### Corneal Zones to be used for Recording Location



#### Corneal Vascularization

Maximal corneal vascularization will be recorded on a 5-point scale as follows:

## Corneal Vascularization Grading Scale

0 = none	no vessel penetration
1 = trace	<1.00 mm vessel penetration
2 = mild	W 1.00 mm to u 1.5 mm vessel penetration
3 = moderate	> 1.5 mm to u 2.00 mm vessel penetration
4 = severe	Vessel penetration > 2.00 mm

Indicate location:

Nasal (N), Inferior (I), C (Circumferential), T (Temporal), S (superior) X Other (describe)

**Corneal staining**

Set the slit-lamp's cobalt blue light to full intensity and magnification at 16X.

Epithelial integrity will be monitored using a single instillation of fluorescein: one drop of 1% sodium fluorescein or fluorescein sterile strip hydrated with unpreserved normal saline.

Staining will be recorded topographically, the cornea being divided into one central (diameter 6mm) and four peripheral zones (nasal, temporal, inferior and superior). The nature of the staining will be recorded for its severity and depth for each zone as follows

## Corneal Extent Staining Severity

0 = none	no staining
1 = trace	Minimal superficial staining or stippling a. dimpling, discrete dot staining, or b. trace superficial lens insertion marks or foreign body tracks
2 = mild	Regional or diffuse punctate staining a. Central or generalized or b. Peripheral including 3-9 o'clock staining or c. Mild abrasion or foreign body tracks
3 = moderate	Dense coalesced staining up to 2 mm in diameter a. corneal abrasion, or b. foreign body track
4 = severe	Severe abrasion greater than 2mm, ulcerations, epithelial loss, or full thickness abrasion.

Depth

0	=	None
1	=	Superficial
2	=	Full epithelial
3	=	Stromal

**Bulbar Redness**

Bulbar redness (hyperemia) will be recorded on a 5-point scale as follows:

Bulbar Redness Grading Scale

0 = none	no hyperemia
1 = trace	slight regional hyperemia
2 = mild	diffuse hyperemia
3 = moderate	marked regional or diffuse hyperemia
4 = severe	diffuse episcleral or scleral hyperemia

**Limbal Redness**

Limbal redness (hyperemia) will be recorded on a 5-point scale as follows:

Limbal Redness Grading Scale

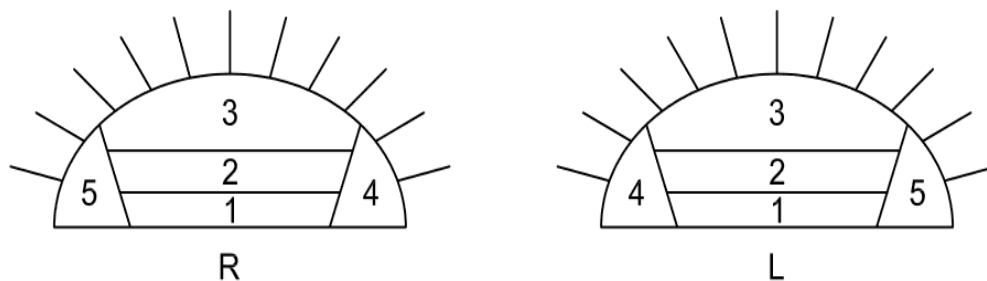
0 = none	no hyperemia
1 = trace	slight limbal hyperemia (mild segmented)
2 = mild	mild limbal hyperemia (mild circumcorneal)
3 = moderate	significant limbal hyperemia (marked segmented)
4 = severe	severe limbal hyperemia (marked circumcorneal)

**Palpebral Conjunctival Observations (Upper and Lower)**

The severity and maximal palpebral conjunctival response will be recorded on a 5-point scale as follows: Palpebral Conjunctival Observations Grading Scale

0 = none	uniform satin appearance of the conjunctiva
1 = trace	slight conjunctival injection without texture
2 = mild	mild or scattered papillae/follicles less than 1 mm in diameter
3 = moderate	a) significant papillae/follicles less than 1mm in diameter, and/or marked conjunctival injection b) staining of the top of 1 papilla
4 = severe	a) localized or generalized papillae/follicles 1 mm or more in diameter b) staining of the top of more than 1 papilla



**Key**

R right eye lid

L left eye lid

**Upper lid**

1 S = superior tarsal conjunctiva

2 C = middle tarsal conjunctiva

3 I = inferior tarsal conjunctiva

4 N = nasal tarsal conjunctiva

5 T = temporal tarsal conjunctiva

**Lower lid (not shown)**

6 L = lower lid conjunctiva

**Other Complications/Findings**

Other findings (ie, giant papillary conjunctivitis, vascularization, pinguecula) will be recorded on a 5-point scale as follows:

**Other Findings Grading Scale**

0 = none	no other significant biomicroscopic findings
1 = trace	minimal findings such as a tear film abnormality (debris of low tear break up time)
2 = mild	mild findings such as: lens adhesion
3 = moderate	significant findings a.iritis with minimal cells or flare b.conjunctivitis or EKC
4 = severe	severe findings such as: a.iritis with marked cells and/or flare b. corneal or conjunctival infection c. corneal ulcer d. recurrent erosion

**Slit Lamp Examination – Contact Lens****Lens wettability**

Front lens surface evaluation of wettability will be assessed at all visits. A slit-lamp must be used with maximum illumination, a diffuser, and magnification of X16.

The front lens surface wettability will be graded as follows:

Front Lens Wettability Grading Scale

0	A smooth uniformly reflecting wettable surface.
1	A coarse hazy wettable surface which seems resolved momentarily with each blink and becomes exacerbated with staring.
2	One stable dry (non-wetting) area of some magnitude.
3	More than 1 stable dry (non-wetting) area of some magnitude.
4	Non-wettable lens surface of severe magnitude.

**Lens front surface deposits**

Lens surface deposits will be assessed at all visits. A slit-lamp must be used with maximum illumination, a diffuser, and low magnification.

The front lens surface deposits will be graded as follows:

Front Lens Deposits Grading Scale

0	None
1	Trace
2	Mild
3	Moderate
4	Severe

**Lens back surface deposits**

Lens surface deposits will be assessed at all visits. A slit-lamp must be used with maximum illumination, a diffuser, and low magnification.

The lens back surface deposits will be graded as follows:

Back Lens Deposits Grading Scale

0	Absent, clean surface
1	Very slight, 3 spots or less of moving particles
2	Slight, up to 10 spots of moving particles

3	Moderate, 3 or less non-moving deposits adherent to lens
4	Severe, 4 or more deposits adherent to the lens and/or corneal indentation

### **Lens fit assessment**

Lens fitting characteristics will be assessed with the lens on-eye and utilizing the biomicroscope with low magnification (X10 to X16) and white light with a diffuser. Lens centration and overall lens fit/movement will be assessed at all visits.

### **Lens centration**

Using a slit lamp with white light, a diffuse and/or broad beam and low-medium magnification, the lens centration of the right and left contact lenses should be evaluated with the eye in the primary position (relaxed, looking straight ahead) and assessed as follows:

Lens Centration Grading Scale

0	Optimal lens centration
1	Acceptable decentration
2	Unacceptable decentration
3	Corneal exposure

### **Overall lens fit / movement**

Using a slit lamp with white light, a diffuse and/or broad beam and low-medium magnification, the movement of the right and left contact lenses should be evaluated a) immediately after the blink with the eye in the primary position and if necessary b) recovery following digitally applied lower lid margin push-up with the lower lid and then fit assessed as follows:

Overall Lens Fit / Movement Grading Scale

-2	Unacceptably tight (reduced movement, unacceptable)
-1	Acceptably tight (reduced movement, acceptable)
0	Optimal fit / movement
+1	Acceptable loose (excessive movement, acceptable)
+2	Unacceptable loose (excessive movement, unacceptable)

Note: +2 and -2 are NOT acceptable for study eligibility.

### **Keratometry Reading**

Corneal curvature measurement using a standard keratometer will be performed at all visits. It is essential that best alignment is achieved prior to taking the measurement and the subject opens the

eye as wide as possible. The methodology recommended by the manufacturer will be used. When possible the same operator/technician should use the same equipment at all visits to obtain consistent readings. This measurement will provide corneal curvature measurements. Steep and Flat K readings and axis will be recorded. Readings for this study are required in Diopter (D) for all visits and additionally in mm at baseline visit for contact lens base curve parameter.

## **Appendix 3**

### **Case Report Forms**

# **Screening/Enrolment/Baseline/Lens Dispense Visit Case Report Form**

**Screening/Enrolment/Baseline/Lens Dispense Visit Form**

Subject ID: \_\_\_\_\_

Date: \_\_\_\_/\_\_\_\_/\_\_\_\_ (MM/DD/YYYY)

Collection Start Time: \_\_\_\_:\_\_\_\_ (HH:MM, 24h)

Principal Investigator: \_\_\_\_\_

Clinical Investigator: \_\_\_\_\_

Subject Sex: ☐ Male ☐ Female

Subject Age: \_\_\_\_\_

**Subject Ethnicity:**

Do you consider yourself Hispanic/Latino or not Hispanic/Latino (select single best answer)?

☐ Hispanic/Latino ☐ not Hispanic/Latino**Subject Race:**

Which of the following five racial designations best describes you (select all that applies)?

☐ American Indian or Alaska Native ☐ Asian (add specific location of asia)  
☐ Black or African American ☐ White  
☐ Native Hawaiian or Other Pacific IslanderSigned Inform Consent Collected: ☐ Yes ☐ No**Medical/Ocular Tab****Medical and Ocular history****a. Medical history (include pregnancy and lactation)**

Record clinically significant medical history if occurred within the last 2 years and any ongoing disease/conditions

☐ None

Condition	Date Started (MM/DD/YYYY)	Date Stopped (MM/DD/YYYY)	Ongoing
			Yes / No
			Yes / No
			Yes / No

**b. Ocular history**

Record clinically significant ocular history if occurred within the last 2 years and any ongoing ocular disease/conditions

☐ None

Condition	Eye	Date Started (MM/DD/YYYY)	Date Stopped (MM/DD/YYYY)	Ongoing
	OD / OS / OU			Yes / No
	OD / OS / OU			Yes / No
	OD / OS / OU			Yes / No

**c. Concomitant Medication**

List all systemic and ocular medication used within the past 30 days (include all over the counter and prescription medications)

☐ None

Medication name	Dose	Route	Freq	Condition	Eye	Date Started MM/DD/YYYY	Date Stopped MM/DD/YYYY	Continuing
		<input type="checkbox"/> po <input type="checkbox"/> SC <input type="checkbox"/> IM <input type="checkbox"/> IV <input type="checkbox"/> topical <input type="checkbox"/> other _____	<input type="checkbox"/> qd <input type="checkbox"/> bid <input type="checkbox"/> tid <input type="checkbox"/> qid <input type="checkbox"/> prn <input type="checkbox"/> other _____		NA OD OS OU			Yes / No
		<input type="checkbox"/> po <input type="checkbox"/> SC <input type="checkbox"/> IM <input type="checkbox"/> IV <input type="checkbox"/> topical <input type="checkbox"/> other _____	<input type="checkbox"/> qd <input type="checkbox"/> bid <input type="checkbox"/> tid <input type="checkbox"/> qid <input type="checkbox"/> prn <input type="checkbox"/> other _____		NA OD OS OU			Yes / No
		<input type="checkbox"/> po <input type="checkbox"/> SC <input type="checkbox"/> IM <input type="checkbox"/> IV <input type="checkbox"/> topical <input type="checkbox"/> other _____	<input type="checkbox"/> qd <input type="checkbox"/> bid <input type="checkbox"/> tid <input type="checkbox"/> qid <input type="checkbox"/> prn <input type="checkbox"/> other _____		NA OD OS OU			Yes / No

**Most Recent Contact Lens Wearing Experience**

- ☐ Previous experience unknown
 ☐ No prior lens experience  
☐ New wearer (less than 2 months wear)
 ☐ Lens wearer of 2 months or greater

**Was the most recent contact lens wearing experience successful?**

- ☐ Yes, Successful  
☐ No, Unsuccessful (describe why unsuccessful \_\_\_\_\_)

**Most Recent Primary Contact Lens Type:**

- ☐ Rigid lens
 ☐ Hydrogel lens
 ☐ Silicone hydrogel lens  
☐ Other (if other, describe \_\_\_\_\_)



**Most Recent Contact Lens Modality,** ☐ daily wear ☐ extended wear**Recent Lens Care Solution System:** \_\_\_\_\_☐ no use ☐ unknown**Recent Rewetting Drops:** \_\_\_\_\_☐ no use ☐ unknown**Average and Comfortable Wear Time**1) At what time of day do you usually insert your habitual contact lenses? ☐ NO DATA

\_\_\_\_\_ (HH:MM, 24h)

2) At what time of day do you usually remove your habitual contact lenses? ☐ NO DATA

\_\_\_\_\_ (HH:MM, 24h)

3) Are contact lenses comfortable all day long? ☐ Yes ☐ No ☐ NO DATA

If No, at what time of day do your habitual contact lenses usually begin to feel uncomfortable?

☐ NO DATA \_\_\_\_\_ (HH:MM, 24h)**Questionnaires Tab****Comfort, Vision and Handling Questionnaires****1) Comfort**a. Rate the overall comfort **at insertion when you wear your habitual correction last 7 days:**

Right eye: 0 / 1 / 2 / 3 / 4 / 5

Left eye: 0 / 1 / 2 / 3 / 4 / 5

5	Excellent, cannot be felt
4	Very comfortable, just felt occasionally
3	Comfortable, noticeable but not irritating
2	Slightly uncomfortable, just irritating or annoying
1	Very uncomfortable, very irritating or annoying
0	Cause pain, lens cannot be tolerated

b. Rate the overall comfort **during the day while you wear your habitual correction last 7 days:**

Right eye: 0 / 1 / 2 / 3 / 4 / 5

Left eye: 0 / 1 / 2 / 3 / 4 / 5

5	Excellent, cannot be felt
4	Very comfortable, just felt occasionally
3	Comfortable, noticeable but not irritating
2	Slightly uncomfortable, just irritating or annoying
1	Very uncomfortable, very irritating or annoying
0	Cause pain, lens cannot be tolerated

c. Rate the overall comfort **at the end of wearing when you wear your habitual correction last 7 days:** Right eye: 0 / 1 / 2 / 3 / 4 / 5 Left eye: 0 / 1 / 2 / 3 / 4 / 5

5	Excellent, cannot be felt
4	Very comfortable, just felt occasionally
3	Comfortable, noticeable but not irritating
2	Slightly uncomfortable, just irritating or annoying
1	Very uncomfortable, very irritating or annoying
0	Cause pain, lens cannot be tolerated

## 2) Vision

a. Rate your **overall vision during the day when you wear your habitual correction last 7 days:**

Right eye: 0 / 1 / 2 / 3 / 4 / 5 Left eye: 0 / 1 / 2 / 3 / 4 / 5

5	Excellent, cannot notice any visual loss
4	Very good, just noticeable and very occasional reduction
3	Good, occasional noticeable but acceptable reduction
2	Poor, noticeable but acceptable reduction
1	Very poor, marked and unacceptable reduction
0	Unacceptable, lens cannot be worn

b. Rate your **satisfaction with vision during the day when you wear your habitual correction last 7 days:** Right eye: 0 / 1 / 2 / 3 / 4 / 5 Left eye: 0 / 1 / 2 / 3 / 4 / 5

5	Excellent
4	Very good
3	Good
2	Poor
1	Very poor
0	Unacceptable

## 3) Handling

a. Rate your **overall handling of your habitual contact lenses:**

Right eye: 0 / 1 / 2 / 3 / 4 / 5 Left eye: 0 / 1 / 2 / 3 / 4 / 5

5	Excellent
4	Very good
3	Good
2	Poor
1	Very poor
0	Unacceptable

## Symptoms Questionnaire

How often do your eyes experience the following symptoms during the day **when you wear your habitual correction last 7 days?**

	Presence	Eye	If yes, please select the frequency	If yes, please select the severity level
<b>Discomfort</b>	Yes / No	Right/Left/Both	Rarely / Sometimes / Often / Always	Slight / Moderate / Severe
<b>Excess Tearing</b>	Yes / No	Right/Left/Both	Rarely / Sometimes / Often / Always	Slight / Moderate / Severe
<b>Sensitivity to light</b>	Yes / No	Right/Left/Both	Rarely / Sometimes / Often / Always	Slight / Moderate / Severe
<b>Glare</b>	Yes / No	Right/Left/Both	Rarely / Sometimes / Often / Always	Slight / Moderate / Severe
<b>Halos</b>	Yes / No	Right/Left/Both	Rarely / Sometimes / Often / Always	Slight / Moderate / Severe
<b>Itching</b>	Yes / No	Right/Left/Both	Rarely / Sometimes / Often / Always	Slight / Moderate / Severe
<b>Burning</b>	Yes / No	Right/Left/Both	Rarely / Sometimes / Often / Always	Slight / Moderate / Severe
<b>Blurred Vision</b>	Yes / No	Right/Left/Both	Rarely / Sometimes / Often / Always	Slight / Moderate / Severe
<b>Variability of Vision</b>	Yes / No	Right/Left/Both	Rarely / Sometimes / Often / Always	Slight / Moderate / Severe
<b>Lens Needs cleaning</b>	Yes / No	Right/Left/Both	Rarely / Sometimes / Often / Always	Slight / Moderate / Severe
<b>Other (describe)</b>				

**VA / Refraction / Keratometry Tab****Sphero-cylindrical Manifest Refraction and Best Corrected Visual Acuity**

	Sphero-cylindrical Manifest Refraction			Sphero-cylindrical VA (BCVA)
	Sph (D)	Cyl (D)	Axis (°)	LogMar
<b>OD</b>		(-)		
<b>OS</b>		(-)		
<b>OU</b>	n/a	n/a	n/a	

**Best Sphere Refraction and Visual Acuity**

	Best Sphere Refraction	Best Sphere VA
	Sph (D)	LogMar
<b>OD</b>		
<b>OS</b>		
<b>OU</b>	n/a	

**Keratometry**

	K readings			Corneal Cylinder	
	Flat (D)	Steep (D)	Meridian of Steep Power	Cyl (D)	Axis (°)

OD				(-)	
OS				(-)	

**Slit Lamp Tab****Slit Lamp Findings- Ocular (Biomicroscopy)****a. Bulbar Conjunctival hyperaemia** : Record severity of bulbar hyperemia (redness) on a 5-point scale.

OD: 0 / 1 / 2 / 3 / 4

OS: 0 / 1 / 2 / 3 / 4

0 = none	no hyperemia
1 = trace	slight regional hyperemia
2 = mild	diffuse hyperemia
3 = moderate	marked regional or diffuse hyperemia
4 = severe	diffuse episcleral or scleral hyperemia

**b. Limbal Hyperaemia**: Record the severity of limbal redness (hyperemia) on a 5-point scale.

OD: 0 / 1 / 2 / 3 / 4

OS: 0 / 1 / 2 / 3 / 4

0 = none	no hyperemia
1 = trace	slight limbal hyperemia (mild segmented)
2 = mild	mild limbal hyperemia (mild circumcorneal)
3 = moderate	significant limbal hyperemia (marked segmented)
4 = severe	severe limbal hyperemia (marked circumcorneal)

**c. Palpebral Conjunctival Observations (upper and lower)**

Record the severity of the palpebral conjunctival on a 5-point scale on each locations.

Eye	Location	Severity*	Eye	Location	Severity*
OD	Upper lid-S (1)	0 / 1 / 2 / 3 / 4	OS	Upper lid-S (1)	0 / 1 / 2 / 3 / 4
	Upper lid-C (2)	0 / 1 / 2 / 3 / 4		Upper lid-C (2)	0 / 1 / 2 / 3 / 4
	Upper lid-I (3)	0 / 1 / 2 / 3 / 4		Upper lid-I (3)	0 / 1 / 2 / 3 / 4
	Upper lid-N (4)	0 / 1 / 2 / 3 / 4		Upper lid-N (4)	0 / 1 / 2 / 3 / 4
	Upper lid-T (5)	0 / 1 / 2 / 3 / 4		Upper lid-T (5)	0 / 1 / 2 / 3 / 4
	Lower lid-L (6)	0 / 1 / 2 / 3 / 4		Lower lid-L (6)	0 / 1 / 2 / 3 / 4

**Key**

R right eye lid

L left eye lid

**Upper lid**

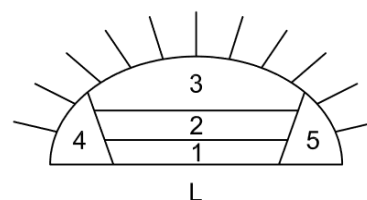
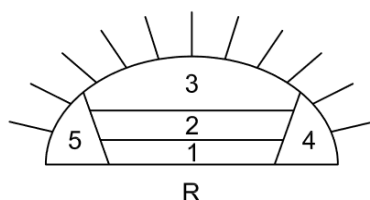
1 S = superior tarsal conjunctiva

2 C = middle tarsal conjunctiva

3 I = inferior tarsal conjunctiva

4 N = nasal tarsal conjunctiva

5 T = temporal tarsal conjunctiva

**Lower lid (not shown)**

6 L = lower lid conjunctiva

**Severity**

0 = none	uniform satin appearance of the conjunctiva
1 = trace	slight conjunctival injection without texture
2 = mild	mild or scattered papillae/follicles less than 1 mm in diameter
3 = moderate	a) significant papillae/follicles less than 1mm in diameter, and/or marked conjunctival injection b) staining of the top of 1 papilla
4 = severe	a) localized or generalized papillae/follicles 1 mm or more in diameter b) staining of the top of more than 1 papilla

**d. Corneal Edema :** Record the severity of the edema on a 5-point scale.

**i. Epithelial Edema**

OD: 0 / 1 / 2 / 3 / 4

OS: 0 / 1 / 2 / 3 / 4

0 = none	No epithelial or sub-epithelial haziness. Normal transparency
1 = trace	Barely discernible localized epithelial or subepithelial haziness
2 = mild	Faint but definite localized or generalized haziness
3 = moderate	Significant localized or generalized haziness
4 = severe	Definite widespread, epithelial cloudiness giving dull glass appearance to cornea, or numerous coalescent bullae (note the number and location of bullae)

**ii. Epithelial Microcysts**

OD: 0 / 1 / 2 / 3 / 4

OS: 0 / 1 / 2 / 3 / 4

0 = none	No microcysts
1 = trace	1 to 20 microcysts
2 = mild	21 to 50 microcysts
3 = moderate	51 to 100 microcysts
4 = severe	> 100 microcysts or bullae

Note for the presence/absence of fluid-filled or debris-filled cysts <span style="float: right;"><input type="checkbox"/> NO DATA</span>
OD- numbers: _____ location: _____ OS- numbers: _____ location: _____

**iii. Stromal Edema**

OD: 0 / 1 / 2 / 3 / 4

OS: 0 / 1 / 2 / 3 / 4

0 = none	No stromal cloudiness. Normal transparency
1 = trace	Barely discernible localized stromal cloudiness
2 = mild	Faint but definite localized or generalized stromal cloudiness, 2 or fewer corneal striae
3 = moderate	Significant localized or generalized stromal cloudiness, 3 pronounced corneal striae
4 = severe	Definite widespread, stromal cloudiness, folds in Descemet's membrane and ≥ 4 pronounced striae

**e. Corneal Vascularization**

Record the severity of Maximal corneal vascularization on a 5-point scale along with its depth and location.

Eye	Severity	Depth	Location	Describe if other
OD	0	None	Nasal	
	1	Superficial	Temporal	
	2	Stromal	Inferior	
	3		Superior	
	4		Circumlimbal	
OS	0	None	Nasal	
	1	Superficial	Temporal	
	2	Stromal	Inferior	
	3		Superior	
	4		Circumlimbal	
			Other	

**Severity**

0 = none	no vessel penetration
1 = trace	<1.00 mm vessel penetration
2 = mild	W 1.00 mm to u 1.5 mm vessel penetration
3 = moderate	> 1.5 mm to u 2.00 mm vessel penetration
4 = severe	vessel penetration > 2.00 mm

**f. Corneal staining**

Record the staining topographically, the cornea being divided into one central (diameter 6mm) and four peripheral zones (nasal, temporal, inferior and superior).

Record the nature of the staining for its severity and depth for each zone.

Eye	Location	Severity	Depth	Staining is associated with an underlying infiltrate?
OD	Central	0 / 1 / 2 / 3 / 4	0=None 1=Superficial 2 =Full epithelial 3=Stromal	Yes No
	Peripheral-Nasal	0 / 1 / 2 / 3 / 4	0 / 1 / 2 / 3	Yes / No
	Peripheral-Temporal	0 / 1 / 2 / 3 / 4	0 / 1 / 2 / 3	Yes / No
	Peripheral-Inferior	0 / 1 / 2 / 3 / 4	0 / 1 / 2 / 3	Yes / No
	Peripheral-Superior	0 / 1 / 2 / 3 / 4	0 / 1 / 2 / 3	Yes / No
OS	Central	0 / 1 / 2 / 3 / 4	0 / 1 / 2 / 3	Yes / No
	Peripheral-Nasal	0 / 1 / 2 / 3 / 4	0 / 1 / 2 / 3	Yes / No
	Peripheral-Temporal	0 / 1 / 2 / 3 / 4	0 / 1 / 2 / 3	Yes / No
	Peripheral-Inferior	0 / 1 / 2 / 3 / 4	0 / 1 / 2 / 3	Yes / No
	Peripheral-Superior	0 / 1 / 2 / 3 / 4	0 / 1 / 2 / 3	Yes / No

**Severity**

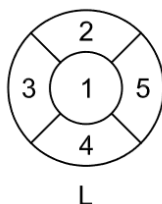
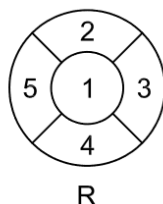
0 = none	no staining
1 = trace	Minimal superficial staining or punctate staining a. dimpling, discrete dot staining, or b. trace superficial lens insertion marks or foreign body tracks
2 = mild	Regional or diffuse punctate staining a. central or generalized, or b. peripheral including 3-9 o'clock staining, or c. mild abrasion or foreign body tracks
3 = moderate	Dense coalesced staining up to 2 mm in diameter a. corneal abrasion, or b. foreign body track
4 = severe	Dense coalescent staining greater 2mm in diameter, ulcerations, epithelial loss, or full thickness abrasion. Diagram and explain on source document.

**g. Corneal Infiltrates**

Record the nature of the corneal infiltrates followed by locations, classification, severity, type, depth of infiltrate, number of infiltrates and size of the largest infiltrates. ☐ None

E y e	Location	Classification	Severity	Type	Depth of infiltrate*	Number of infiltrates	Size of largest infiltrate (mm)	Vision affected?
<b>O D</b>	n/a	Level 1	0	focus	E			Yes
	Central	Level 2	1	diffuse	AS			No
	P-Superior	Level 3	2		P			
	P-Nasal	Level 4	3					
	P-Inferior	Level 5	4					
	P-Temporal							
<b>O S</b>	n/a	Level 1	0	focus	E			Yes
	Central	Level 2	1	diffuse	AS			No
	P-Superior	Level 3	2		P			
	P-Nasal	Level 4	3					
	P-Inferior	Level 5	4					
	P-Temporal							

\*E = epithelial, AS = anterior stromal, P = mid/posterior stromal

**Corneal Zones to be used for Recording Location****Key**

- R right eye  
L left eye  
1 C = central  
2 S = superior  
3 N = nasal  
4 I = inferior  
5 T = temporal

**Outcomes Classification for Corneal Infiltrates**

Level 1	High probability of microbial keratitis attributed to contact lens wear with loss of vision and/or surgical intervention attributed to event
Level 2	High probability of microbial keratitis attributed to contact lens wear without loss of vision or surgical intervention attributed to event
Level 3	High probability of infiltrative keratitis of indeterminate etiology attributed to contact lens wear without loss of vision or surgical intervention attributed to event
Level 4	High probability of sterile infiltrative keratitis attributed to contact lens wear without loss of vision or surgical intervention attributed to event
Level 5	High probability of infiltrative keratitis not attributed to contact lens wear
<b>Definitions for classification</b>	
Loss of vision	Defined as loss of 2 lines of corrected acuity in affected eye. Change in best spectacle-corrected visual acuity will be used for affected eyes having this data available at baseline and follow-up. Change from baseline to final soft contact lens-corrected acuity will be used if spectacle-corrected data unavailable.
Surgical intervention	Defined as any laser or incisional technique used to restore vision or prevent additional complications or any application of tissue adhesive to treat impending/actual perforation of the cornea.
High probability of microbial keratitis	One or more corneal stromal infiltrates greater than 1mm in size with pain more than mild and one or more of following: anterior chamber reaction more than minimal; mucopurulent discharge; positive corneal culture. The presence of a subsequent corneal scar is a requirement in cases in which adequate follow-up data and medical records are available.
High probability of infiltrative keratitis of indeterminate etiology	One or more corneal stromal infiltrates accompanied by signs/symptoms not clearly meeting criteria for the sterile or microbial groups.
High probability of sterile infiltrative keratitis	One or more corneal stromal infiltrates the largest of which is 1mm or less in size, and all of the following: outside central 6mm; minimal or no anterior chamber reaction, no mucopurulent discharge; mild or no pain.

**Severity of corneal infiltrates on 5-point scale**

0 = none	no infiltrates
1 = trace	single or multiple epithelial infiltrates < 1 mm in diameter
2 = mild	Single or multiple epithelial infiltrates ≥ 1 mm and < 2 mm in diameter
3 = moderate	Multiple infiltrates ≥ 2 mm and < 3 mm in diameter
4 = severe	Multiple dense infiltrates ≥ 3 mm in diameter

**a. Other complications/Findings**

Record other findings (ie, pinguecula) on a 5-point scale and its description. List all report.

OD: 0 / 1 / 2 / 3 / 4

OS: 0 / 1 / 2 / 3 / 4

NOTE



0 = none	no other significant biomicroscopic findings
1 = trace	minimal findings such as a tear film abnormality (debris of low tear break up time)
2 = mild	mild findings such as: lens adhesion
3 = moderate	significant findings c. iritis with minimal cells or flare d. conjunctivitis or EKC
4 = severe	severe findings such as: a. iritis with marked cells and/or flare b. corneal or conjunctival infection c. corneal ulcer d. recurrent erosion

**Is this subject eligible for the study participation?**

☐ Yes ☐ No

**(Fill out Paper “Inclusion & Exclusion Criteria Checklist”)**

*If no, submit the form by signing on the last tab and fill out Exit Form.*

*If yes, perform the rest of procedures.*

**Dispense Tab**

**Randomization Group:** A / B / C / D

**Study Lens Type:** Q / V

**Care Solution:** B / C

**Dispense Contact Lens Rx**

	Lens Lot #	Rx-Sph (D)	BC (mm)	Diameter (mm)
OD				
OS				
Note				

***Insert the study Lens and wait for 5 minutes!***

**Visual Acuity and Over-refraction with Dispensing Contact Lens**

	VA with Dispensing Lens (logMar)	Spherical Over-Refractive (D)	VA with Over-Refractive (logMar)
OD			
OS			
OU		n/a	n/a

**Lens Surface / Fitting Tab****Slit Lamp Lens Surface/Fit Assessment****a. Lens Front Surface Wettability**

OD: 0 / 1 / 2 / 3 / 4

OS: 0 / 1 / 2 / 3 / 4

0	A smooth uniformly reflecting wettable surface.
1	A coarse hazy wettable surface which seems resolved momentarily with each blink and becomes exacerbated with staring.
2	One stable dry (non-wetting) area of some magnitude.
3	More than 1 stable dry (non-wetting) area of some magnitude.
4	Non-wettable lens surface of severe magnitude.

**b. Lens Front Surface Deposits: Observe under low slit lamp magnification**

OD: 0 / 1 / 2 / 3 / 4

OS: 0 / 1 / 2 / 3 / 4

0	Absent, clean surface
1	Very slight, only visible after tear film drying
2	Slight, visible deposits easily removable
3	Moderate, deposits adherent and not removable
4	Severe, non-removable deposits and comfort affected

**c. Lens Back Surface Deposits: Observe under low slit lamp magnification**

OD: 0 / 1 / 2 / 3 / 4

OS: 0 / 1 / 2 / 3 / 4

0	Absent, clean surface
1	Very slight, 3 spots or less of moving particles
2	Slight, up to 10 spots of moving particles
3	Moderate, 3 or less non-moving deposits adherent to lens
4	Severe, 4 or more deposits adherent to the lens and/or corneal indentation

**d. Lens Centration**

OD: 0 / 1 / 2

OS: 0 / 1 / 2

Lens centration of the right and left contact lenses should be evaluated with the eye in the primary position (relaxed, looking straight ahead) and assessed as follows:

0	Optimal lens centration
1	Acceptable decentration
2	Unacceptable decentration

**e. Lens Overall Movement (after blink)**

OD: -2 / -1 / 0 / +1 / +2

OS: -2 / -1 / 0 / +1 / +2

Evaluate immediately after the blink with the eye in the primary position;

-2	Unacceptably tight (reduced movement, unacceptable)
-1	Acceptably tight (reduced movement, acceptable)
0	Optimal fit / movement

+1	Acceptable loose (excessive movement, acceptable)
+2	Unacceptable loose (excessive movement, unacceptable)

**End Tab****Instruction for Use for Contact Lens and Care System?** ☐ Yes ☐ No**Study Products Supplied?** ☐ Yes ☐ No

(If Yes, complete Study Product Dispensing and Accountability Log on Trial Master File)

**Any Adverse Events to be Reported?** ☐ Yes ☐ No

(If Yes, fill out Adverse Event Form and contact to CRO accordingly)

**Any Protocol Deviation?** ☐ Yes ☐ No

(If Yes, fill out Protocol Deviation Report and contact to CRO accordingly)

**Any Device Deficiencies to be Reported?** ☐ Yes ☐ No

(If Yes, fill out Device Deficiency Report and contact to CRO accordingly)

**Is This Subject Eligible For Study Participation?** ☐ Yes ☐ No

(If No, fill out Exit Form)

**Comments**

--

**A signed and dated copy of the Informed Consent (by the subject and investigator) was provided to the subject. By electronically signing below I am confirming that Informed Consent was obtained for this subject as per the study protocol, and I am accepting the data pertaining to this subject to be complete and accurate.**

Date: \_\_\_\_/\_\_\_\_/\_\_\_\_ (MM/DD/YYYY)

Time: \_\_\_\_:\_\_\_\_ (HH:MM, 24h)

Investigator Printed name of the signer\_\_\_\_\_

Signature\_\_\_\_\_

# **Follow Up Visit Case Report Form**

**Follow-up/Unscheduled Visit Form**

Subject ID: \_\_\_\_\_

Date: \_\_\_\_/\_\_\_\_/\_\_\_\_ (MM/DD/YYYY)

Collection Start Time: \_\_\_\_:\_\_\_\_ (HH:MM, 24h)

Principal Investigator: \_\_\_\_\_

Clinical Investigator: \_\_\_\_\_

Visit: Day 7 / Day14 / Day 30 / Day 60 / Day 91

/ Unscheduled (When from the initial Visit?, Reason for Visit) \_\_\_\_\_

/ AE Follow-up (When from the initial AE visit?) \_\_\_\_\_

Is this study completion final visit? ☐ Yes ☐ No**Medical / Ocular Tab****Medical and Ocular history****a. Medical history (include pregnancy and lactation)**

Record clinically significant medical history if occurred within the last 2 years and any ongoing disease/conditions

☐ None☐ No Change Since Last Visit

Condition	Date Started (MM/DD/YYYY)	Date Stopped (MM/DD/YYYY)	Ongoing
			Yes / No
			Yes / No
			Yes / No

**b. Ocular history**

Record clinically significant ocular history if occurred within the last 2 years and any ongoing ocular disease/conditions

☐ None☐ No Change Since Last Visit

Condition	Eye	Date Started (MM/DD/YYYY)	Date Stopped (MM/DD/YYYY)	Ongoing
	OD / OS / OU			Yes / No
	OD / OS / OU			Yes / No
	OD / OS / OU			Yes / No

**c. Concomitant Medication**

List all systemic and ocular medication used within the past 30 days (include all over the counter and prescription medications)

☐ None☐ No Change Since Last Visit

Medication name	Dose	Route	Freq	Condition	Eye	Date Started MM/DD/YYYY	Date Stopped MM/DD/YYYY	Continuing
		<input type="checkbox"/> po <input type="checkbox"/> SC <input type="checkbox"/> IM <input type="checkbox"/> IV <input type="checkbox"/> topical <input type="checkbox"/> other	<input type="checkbox"/> qd <input type="checkbox"/> bid <input type="checkbox"/> tid <input type="checkbox"/> qid <input type="checkbox"/> prn <input type="checkbox"/> other		NA OD OS OU			Yes / No
		<input type="checkbox"/> po <input type="checkbox"/> SC <input type="checkbox"/> IM <input type="checkbox"/> IV <input type="checkbox"/> topical <input type="checkbox"/> other	<input type="checkbox"/> qd <input type="checkbox"/> bid <input type="checkbox"/> tid <input type="checkbox"/> qid <input type="checkbox"/> prn <input type="checkbox"/> other		NA OD OS OU			Yes / No
		<input type="checkbox"/> po <input type="checkbox"/> SC <input type="checkbox"/> IM <input type="checkbox"/> IV <input type="checkbox"/> topical <input type="checkbox"/> other	<input type="checkbox"/> qd <input type="checkbox"/> bid <input type="checkbox"/> tid <input type="checkbox"/> qid <input type="checkbox"/> prn <input type="checkbox"/> other		NA OD OS OU			Yes / No

**Average and Comfortable Wear Time**1) At what time of day have you usually inserted your contact lenses since last visit? ☐ NO DATA

\_\_\_\_\_ (HH:MM, 24h)

2) At what time of day have you usually removed your contact lenses since last visit? ☐ NO DATA

\_\_\_\_\_ (HH:MM, 24h)

3) Are contact lenses comfortable while wearing? ☐ Yes ☐ No ☐ NO DATAIf No, at what time of day do your contact lenses usually begin to feel uncomfortable? ☐ NO DATA

\_\_\_\_\_ (HH:MM, 24h)

4) How many days per week have you wear the study lenses since last visit? \_\_\_\_\_ days/week

**Rewetting Drop Usage**

1) If a rewetting drop dispensed last visit, how often have you used since last visit? \_\_\_\_\_ times/day

**Questionnaires Tab****Comfort, Vision and Handling Questionnaires**☐ NO DATA**1) Comfort**a. Rate the overall comfort **at insertion when you wear your study lenses last 7 days:**

Right eye: 0 / 1 / 2 / 3 / 4 / 5

Left eye: 0 / 1 / 2 / 3 / 4 / 5

5	Excellent, cannot be felt
4	Very comfortable, just felt occasionally
3	Comfortable, noticeable but not irritating
2	Slightly uncomfortable, just irritating or annoying
1	Very uncomfortable, very irritating or annoying
0	Cause pain, lens cannot be tolerated

b. Rate the overall comfort **during the day while you wear your study lenses last 7 days:**

Right eye: 0 / 1 / 2 / 3 / 4 / 5

Left eye: 0 / 1 / 2 / 3 / 4 / 5

5	Excellent, cannot be felt
4	Very comfortable, just felt occasionally
3	Comfortable, noticeable but not irritating
2	Slightly uncomfortable, just irritating or annoying
1	Very uncomfortable, very irritating or annoying
0	Cause pain, lens cannot be tolerated

c. Rate the overall comfort **at the end of wearing when you wear your study lenses last 7 days:**

Right eye: 0 / 1 / 2 / 3 / 4 / 5

Left eye: 0 / 1 / 2 / 3 / 4 / 5

5	Excellent, cannot be felt
4	Very comfortable, just felt occasionally
3	Comfortable, noticeable but not irritating
2	Slightly uncomfortable, just irritating or annoying
1	Very uncomfortable, very irritating or annoying
0	Cause pain, lens cannot be tolerated

**2) Vision**a. Rate your **overall vision during the day when you wear your study lenses last 7 days:**

Right eye: 0 / 1 / 2 / 3 / 4 / 5

Left eye: 0 / 1 / 2 / 3 / 4 / 5

5	Excellent, cannot notice any visual loss
4	Very good, just noticeable and very occasional reduction
3	Good, occasional noticeable but acceptable reduction
2	Poor, noticeable but acceptable reduction
1	Very poor, marked and unacceptable reduction
0	Unacceptable, lens cannot be worn

b. Rate your **satisfaction with vision during the day when you wear your study lenses last 7 days:** Right eye: 0 / 1 / 2 / 3 / 4 / 5 Left eye: 0 / 1 / 2 / 3 / 4 / 5

5	Excellent
4	Very good
3	Good
2	Poor
1	Very poor
0	Unacceptable

### 3) Handling

a. Rate your **overall handling of your study lenses:**

Right eye: 0 / 1 / 2 / 3 / 4 / 5 Left eye: 0 / 1 / 2 / 3 / 4 / 5

5	Excellent
4	Very good
3	Good
2	Poor
1	Very poor
0	Unacceptable

### Symptoms Questionnaire

How often do your eyes experience the following symptoms during the day **when your wear your study lenses last 7 days?**

	Presence*	Eye*	If yes, please select the frequency*	If yes, please select the severity level*
<b>Discomfort</b>	Yes / No	Right/Left/Both	Rarely / Sometimes / Often / Always	Slight / Moderate / Severe
<b>Excess Tearing</b>	Yes / No	Right/Left/Both	Rarely / Sometimes / Often / Always	Slight / Moderate / Severe
<b>Sensitivity to light</b>	Yes / No	Right/Left/Both	Rarely / Sometimes / Often / Always	Slight / Moderate / Severe
<b>Glare</b>	Yes / No	Right/Left/Both	Rarely / Sometimes / Often / Always	Slight / Moderate / Severe
<b>Halos</b>	Yes / No	Right/Left/Both	Rarely / Sometimes / Often / Always	Slight / Moderate / Severe
<b>Itching</b>	Yes / No	Right/Left/Both	Rarely / Sometimes / Often / Always	Slight / Moderate / Severe
<b>Burning</b>	Yes / No	Right/Left/Both	Rarely / Sometimes / Often / Always	Slight / Moderate / Severe
<b>Blurred Vision</b>	Yes / No	Right/Left/Both	Rarely / Sometimes / Often / Always	Slight / Moderate / Severe
<b>Variability of Vision</b>	Yes / No	Right/Left/Both	Rarely / Sometimes / Often / Always	Slight / Moderate / Severe
<b>Lens Needs cleaning</b>	Yes / No	Right/Left/Both	Rarely / Sometimes / Often / Always	Slight / Moderate / Severe
<b>Other (describe)</b>				



**VA/OR with Dispense CL Tab****Visual Acuity and Over-refraction with Dispensed Contact Lens**

	VA with Dispensed Lens (logMar)	Spherical Over-Refractive (D)	VA with Over-Refractive (logMar)
<b>OD</b>			
<b>OS</b>			
<b>OU</b>		n/a	n/a

**Is VA with Dispensed Lens on this visit 0.2 logMar worse than initial visit BCVA?**

☐ Yes ☐ No

**If "Yes", which eye?** ☐ OD ☐ OS ☐ OU

**If "Yes", describe the causes of visual acuity change:** \_\_\_\_\_

In the case of visual acuity is reduced by  $\geq 0.2$  LogMAR, a follow up visit should be scheduled **within 3 days** of the event. If the visual acuity loss persists at follow up, ongoing follow up visits should be scheduled **within 3 days** until the visual acuity loss has resolved or the Investigator determines the condition is stable.

**If "Yes", is this VA change greater or equal to 14 days?** ☐ Yes ☐ No (If yes, file Adverse Event Form)

**Replacement Lenses**

**Any new study lens dispensed since last visit without parameter change?**

☐ Yes ☐ No

If yes, ☐ OD ☐ OS ☐ OU

Primary Reason for the Lens Re-dispense: \_\_\_\_\_

Secondary Reason for the Lens Re-dispense: \_\_\_\_\_

- Lost
- Torn
- Lens Deposits
- Other (Specify) \_\_\_\_\_

**Randomization Group:** A / B / C / D

**Study Lens Type:** Q / V

**Care Solution:** B / C

<b>Replacement - Contact Lens Rx</b>		<input type="checkbox"/> NO DATA		
<b>Eye</b>	<b>Lens Lot #</b>	<b>Rx-Sph (D)</b>	<b>BC (mm)</b>	<b>Diameter (mm)</b>
<b>OD</b>				
<b>OS</b>				
<b>Note</b>				

**Lens Surface / Fitting Tab****Slit Lamp Lens Surface/Fit Assessment****a. Lens Front Surface Wettability**

OD: 0 / 1 / 2 / 3 / 4

OS: 0 / 1 / 2 / 3 / 4

0	A smooth uniformly reflecting wettable surface.
1	A coarse hazy wettable surface which seems resolved momentarily with each blink and becomes exacerbated with staring.
2	One stable dry (non-wetting) area of some magnitude.
3	More than 1 stable dry (non-wetting) area of some magnitude.
4	Non-wettable lens surface of severe magnitude.

**b. Lens Front Surface Deposits: Observe under low slit lamp magnification**

OD: 0 / 1 / 2 / 3 / 4

OS: 0 / 1 / 2 / 3 / 4

0	Absent, clean surface
1	Very slight, only visible after tear film drying
2	Slight, visible deposits easily removable
3	Moderate, deposits adherent and not removable
4	Severe, non-removable deposits and comfort affected

**c. Lens Back Surface Deposits: Observe under low slit lamp magnification**

OD: 0 / 1 / 2 / 3 / 4

OS: 0 / 1 / 2 / 3 / 4

0	Absent, clean surface
1	Very slight, 3 spots or less of moving particles
2	Slight, up to 10 spots of moving particles
3	Moderate, 3 or less non-moving deposits adherent to lens
4	Severe, 4 or more deposits adherent to the lens and/or corneal indentation

**d. Lens Centration**

OD: 0 / 1 / 2

OS: 0 / 1 / 2

Lens centration of the right and left contact lenses should be evaluated with the eye in the primary position (relaxed, looking straight ahead) and assessed as follows:

0	Optimal lens centration
1	Acceptable decentration
2	Unacceptable decentration

**e. Lens Overall Movement (after blink)**

OD: -2 / -1 / 0 / +1 / +2

OS: -2 / -1 / 0 / +1 / +2

Evaluate immediately after the blink with the eye in the primary position;

-2	Unacceptably tight (reduced movement, unacceptable)
-1	Acceptably tight (reduced movement, acceptable)
0	Optimal fit / movement
+1	Acceptable loose (excessive movement, acceptable)
+2	Unacceptable loose (excessive movement, unacceptable)

**Remove contact lenses!****Slit Lamp Tab****Slit Lamp Findings- Ocular (Biomicroscopy)****f. Bulbar Conjunctival hyperaemia** : Record severity of bulbar hyperemia (redness) on a 5-point scale.

OD: 0 / 1 / 2 / 3 / 4

OS: 0 / 1 / 2 / 3 / 4

0 = none	no hyperemia
1 = trace	slight regional hyperemia
2 = mild	diffuse hyperemia
3 = moderate	marked regional or diffuse hyperemia
4 = severe	diffuse episcleral or scleral hyperemia

**g. Limbal Hyperaemia**: Record the severity of limbal redness (hyperemia) on a 5-point scale.

OD: 0 / 1 / 2 / 3 / 4

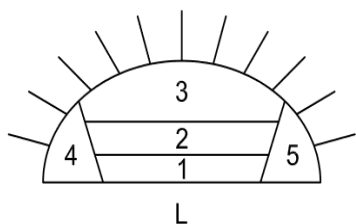
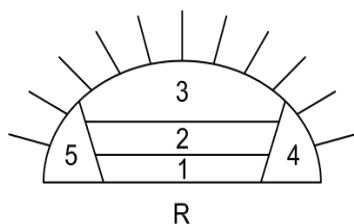
OS: 0 / 1 / 2 / 3 / 4

0 = none	no hyperemia
1 = trace	slight limbal hyperemia (mild segmented)
2 = mild	mild limbal hyperemia (mild circumcorneal)
3 = moderate	significant limbal hyperemia (marked segmented)
4 = severe	severe limbal hyperemia (marked circumcorneal)

**h. Palpebral Conjunctival Observations (upper and lower)**

Record the severity of the palpebral conjunctival on a 5-point scale on each locations.

Eye	Location	Severity*	Eye	Location	Severity*
OD	Upper lid-S (1)	0 / 1 / 2 / 3 / 4	OS	Upper lid-S (1)	0 / 1 / 2 / 3 / 4
	Upper lid-C (2)	0 / 1 / 2 / 3 / 4		Upper lid-C (2)	0 / 1 / 2 / 3 / 4
	Upper lid-I (3)	0 / 1 / 2 / 3 / 4		Upper lid-I (3)	0 / 1 / 2 / 3 / 4
	Upper lid-N (4)	0 / 1 / 2 / 3 / 4		Upper lid-N (4)	0 / 1 / 2 / 3 / 4
	Upper lid-T (5)	0 / 1 / 2 / 3 / 4		Upper lid-T (5)	0 / 1 / 2 / 3 / 4
	Lower lid-L (6)	0 / 1 / 2 / 3 / 4		Lower lid-L (6)	0 / 1 / 2 / 3 / 4

**Key**

R right eye lid

L left eye lid

**Upper lid**

1 S = superior tarsal conjunctiva

2 C = middle tarsal conjunctiva

3 I = inferior tarsal conjunctiva

4 N = nasal tarsal conjunctiva

5 T = temporal tarsal conjunctiva

**Lower lid (not shown)**

6 L = lower lid conjunctiva

**Severity**

0 = none	uniform satin appearance of the conjunctiva
1 = trace	slight conjunctival injection without texture
2 = mild	mild or scattered papillae/follicles less than 1 mm in diameter
3 = moderate	a) significant papillae/follicles less than 1mm in diameter, and/or marked conjunctival injection b) staining of the top of 1 papilla
4 = severe	a) localized or generalized papillae/follicles 1 mm or more in diameter b) staining of the top of more than 1 papilla

**i. Corneal Edema :** Record the severity of the edema on a 5-pint scale.**i. Epithelial Edema**

OD: 0 / 1 / 2 / 3 / 4

OS: 0 / 1 / 2 / 3 / 4

0 = none	No epithelial or sub-epithelial haziness. Normal transparency
1 = trace	Barely discernible localized epithelial or subepithelial haziness
2 = mild	Faint but definite localized or generalized haziness
3 = moderate	Significant localized or generalized haziness
4 = severe	Definite widespread, epithelial cloudiness giving dull glass appearance to cornea, or numerous coalescent bullae (note the number and location of bullae)

**ii. Epithelial Microcysts**

OD: 0 / 1 / 2 / 3 / 4

OS: 0 / 1 / 2 / 3 / 4

0 = none	No microcysts
1 = trace	1 to 20 microcysts
2 = mild	21 to 50 microcysts
3 = moderate	51 to 100 microcysts
4 = severe	> 100 microcysts or bullae

Note for the presence/absence of fluid-filled or debris-filled cysts

☐ NO DATA

OD- numbers: \_\_\_\_\_ location: \_\_\_\_\_

OS- numbers: \_\_\_\_\_ location: \_\_\_\_\_

**iii. Stromal Edema**

OD: 0 / 1 / 2 / 3 / 4

OS: 0 / 1 / 2 / 3 / 4

0 = none	No stromal cloudiness. Normal transparency
1 = trace	Barely discernible localized stromal cloudiness
2 = mild	Faint but definite localized or generalized stromal cloudiness, 2 or fewer corneal striae
3 = moderate	Significant localized or generalized stromal cloudiness, 3 pronounced corneal striae
4 = severe	Definite widespread, stromal cloudiness, folds in Descemet's membrane and $\geq 4$ pronounced striae

- j. Corneal Vascularization:** Record the severity of Maximal corneal vascularization on a 5-point scale along with its depth and location.

Eye	Severity	Depth	Location	Describe if other
OD	0	None	Nasal	
	1	Superficial	Temporal	
	2	Stromal	Inferior	
	3		Superior	
	4		Circumlimbal	
OS	0	None	Nasal	
	1	Superficial	Temporal	
	2	Stromal	Inferior	
	3		Superior	
	4		Circumlimbal	

**Severity**

0 = none	no vessel penetration
1 = trace	<1.00 mm vessel penetration
2 = mild	W 1.00 mm to u 1.5 mm vessel penetration
3 = moderate	> 1.5 mm to u 2.00 mm vessel penetration
4 = severe	vessel penetration > 2.00 mm

**k. Corneal staining**

Record the staining topographically, the cornea being divided into one central (diameter 6mm) and four peripheral zones (nasal, temporal, inferior and superior). Record the nature of the staining for its severity and depth for each zone.

Eye	Location	Severity	Depth	Staining is associated with an underlying infiltrate?
OD	Central	0 / 1 / 2 / 3 / 4	0=None 1=Superficial 2 =Full epithelial 3=Stromal	Yes No
	Peripheral-Nasal	0 / 1 / 2 / 3 / 4	0 / 1 / 2 / 3	Yes / No

<b>OS</b>	Peripheral-Temporal	0 / 1 / 2 / 3 / 4	0 / 1 / 2 / 3	Yes / No
	Peripheral-Inferior	0 / 1 / 2 / 3 / 4	0 / 1 / 2 / 3	Yes / No
	Peripheral-Superior	0 / 1 / 2 / 3 / 4	0 / 1 / 2 / 3	Yes / No
	Central	0 / 1 / 2 / 3 / 4	0 / 1 / 2 / 3	Yes / No
	Peripheral-Nasal	0 / 1 / 2 / 3 / 4	0 / 1 / 2 / 3	Yes / No
	Peripheral-Temporal	0 / 1 / 2 / 3 / 4	0 / 1 / 2 / 3	Yes / No
<b>OS</b>	Peripheral-Inferior	0 / 1 / 2 / 3 / 4	0 / 1 / 2 / 3	Yes / No
	Peripheral-Superior	0 / 1 / 2 / 3 / 4	0 / 1 / 2 / 3	Yes / No

**Severity**

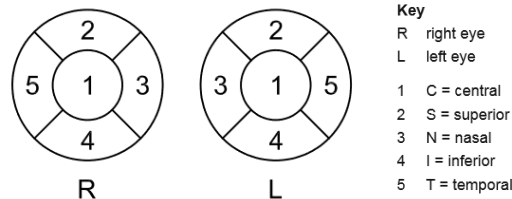
0 = none	no staining
1 = trace	Minimal superficial staining or punctate staining a. dimpling, discrete dot staining, or b. trace superficial lens insertion marks or foreign body tracks
2 = mild	Regional or diffuse punctate staining a. central or generalized, or b. peripheral including 3-9 o'clock staining, or c. mild abrasion or foreign body tracks
3 = moderate	Dense coalesced staining up to 2 mm in diameter a. corneal abrasion, or b. foreign body track
4 = severe	Dense coalescent staining greater 2mm in diameter, ulcerations, epithelial loss, or full thickness abrasion. Diagram and explain on source document.

**I. Corneal Infiltrates**

Record the nature of the corneal infiltrates followed by locations, classification, severity, type, depth of infiltrate, number of infiltrates and size of the largest infiltrates. ☐ None

<b>E y e</b>	<b>Location</b>	<b>Classific ation</b>	<b>Severity</b>	<b>Type</b>	<b>Depth of infiltrate*</b>	<b>Number of infiltrates</b>	<b>Size of largest infiltrate( mm)</b>	<b>Vision affected?</b>
<b>O D</b>	n/a	Level 1	0	focus	E			Yes
	Central	Level 2	1	diffuse	AS			No
	P-Superior	Level 3	2		P			
	P-Nasal	Level 4	3					
	P-Inferior	Level 5	4					
	P-Temporal							
<b>O S</b>	n/a	Level 1	0	focus	E			Yes
	Central	Level 2	1	diffuse	AS			No
	P-Superior	Level 3	2		P			
	P-Nasal	Level 4	3					
	P-Inferior	Level 5	4					
	P-Temporal							

\*E = epithelial, AS = anterior stromal, P = mid/posterior stromal

**Corneal Zones to be used for Recording Location****Outcomes Classification for Corneal Infiltrates**

Level 1	High probability of microbial keratitis attributed to contact lens wear with loss of vision and/or surgical intervention attributed to event
Level 2	High probability of microbial keratitis attributed to contact lens wear without loss of vision or surgical intervention attributed to event
Level 3	High probability of infiltrative keratitis of indeterminate etiology attributed to contact lens wear without loss of vision or surgical intervention attributed to event
Level 4	High probability of sterile infiltrative keratitis attributed to contact lens wear without loss of vision or surgical intervention attributed to event
Level 5	High probability of infiltrative keratitis not attributed to contact lens wear
<b>Definitions for classification</b>	
Loss of vision	Defined as loss of 2 lines of corrected acuity in affected eye. Change in best spectacle-corrected visual acuity will be used for affected eyes having this data available at baseline and follow-up. Change from baseline to final soft contact lens-corrected acuity will be used if spectacle-corrected data unavailable.
Surgical intervention	Defined as any laser or incisional technique used to restore vision or prevent additional complications or any application of tissue adhesive to treat impending/actual perforation of the cornea.
High probability of microbial keratitis	One or more corneal stromal infiltrates greater than 1mm in size with pain more than mild and one or more of following: anterior chamber reaction more than minimal; mucopurulent discharge; positive corneal culture. The presence of a subsequent corneal scar is a requirement in cases in which adequate follow-up data and medical records are available.
High probability of infiltrative keratitis of indeterminate etiology	One or more corneal stromal infiltrates accompanied by signs/symptoms not clearly meeting criteria for the sterile or microbial groups.
High probability of sterile infiltrative keratitis	One or more corneal stromal infiltrates the largest of which is 1mm or less in size, and all of the following: outside central 6mm; minimal or no anterior chamber reaction, no mucopurulent discharge; mild or no pain.

**Severity of corneal infiltrates on 5-point scale**

0 = none	no infiltrates
1 = trace	single or multiple epithelial infiltrates < 1 mm in diameter
2 = mild	Single or multiple epithelial infiltrates ≥ 1 mm and < 2 mm in diameter
3 = moderate	Multiple infiltrates ≥ 2 mm and < 3 mm in diameter
4 = severe	Multiple dense infiltrates ≥ 3 mm in diameter

**m. Other complications/Findings**

Record other findings (ie, pinguecula) on a 5-point scale and its description. List all report.

OD: 0 / 1 / 2 / 3 / 4

OS: 0 / 1 / 2 / 3 / 4

NOTE

0 = none	no other significant biomicroscopic findings
1 = trace	minimal findings such as a tear film abnormality (debris of low tear break up time)
2 = mild	mild findings such as: lens adhesion
3 = moderate	significant findings e. iritis with minimal cells or flare f. conjunctivitis or EKC
4 = severe	severe findings such as: a. iritis with marked cells and/or flare b. corneal or conjunctival infection c. corneal ulcer d. recurrent erosion

**VA / Refraction / Keratometry Tab****Sphero-cylindrical Manifest Refraction and Best Corrected Visual Acuity**

	Sphero-cylindrical Manifest Refraction			Sphero-cylindrical VA (BCVA)
	Sph (D)	Cyl (D)	Axis (°)	LogMar
OD		(-)		
OS		(-)		
OU	n/a	n/a	n/a	

**Best Sphere Refraction and Visual Acuity**

	Best Sphere Refraction	Best Sphere VA
	Sph (D)	LogMar
OD		
OS		
OU	n/a	

Is **BCVA** on this visit 0.2 logMar worse than initial visit BCVA? ☐ Yes ☐ NoIf "Yes", which eye? ☐ OD ☐ OS ☐ OU

If "Yes", describe the causes of visual acuity change: \_\_\_\_\_



In the case of visual acuity is reduced by  $\geq 0.2$  LogMAR, a follow up visit should be scheduled **within 3 days** of the event. If the visual acuity loss persists at follow up, ongoing follow up visits should be scheduled **within 3 days** until the visual acuity loss has resolved or the Investigator determines the condition is stable.

If "Yes", is this VA change greater or equal to 14 days? ☐ Yes ☐ No (If yes, file Adverse Event Form)

### Keratometry

	K readings			Corneal Cylinder	
	Flat (D)	Steep (D)	Meridian of Steep Power	Cyl (D)	Axis (°)
OD				(-)	
OS				(-)	

### Redispende Tab

Randomization Group: A / B / C / D

Study Lens Type: Q / V

Care Solution: B / C

Any Lens Parameter Change or Additional Lens Dispense? ☐ Yes ☐ No

If yes, ☐ OD ☐ OS ☐ OU

Primary Reason for the Parameter Change or Additional Lens Dispense: \_\_\_\_\_

Secondary Reason for the Parameter Change or Additional Lens Dispense: \_\_\_\_\_

- Regular lens replacement schedule
- Visual acuity
- Comfort
- Pathology
- Contact lens fit
- Lost
- Torn
- Lens Deposits
- Bad Edge
- Bad Surface / non-wetting
- Other (Specify)

New Dispense - Contact Lens Rx ☐ NO DATA

Eye	Lens Lot #	Rx-Sph (D)	BC (mm)	Diameter (mm)
OD				
OS				
Note				

***Insert the study Lens and wait for 5 minutes!*****Visual Acuity and Over-refraction with New Dispense Contact Lens**

	VA with Dispensed Lens (logMar)	Spherical Over-Refration (D)	VA with Over-Refration (logMar)
<b>OD</b>			
<b>OS</b>			
<b>OU</b>		n/a	n/a

**Study Lenses Collected/Returned?**☐ Yes ☐ No

(Complete Study Product Dispensing and Accountability Log on Trial Master File)

**Study Product Supplied (Day 30, Day 60, and Unscheduled)?**☐ Yes ☐ No

(Complete Study Product Dispensing and Accountability Log on Trial Master File)

**Any Adverse Events to be Reported?**☐ Yes ☐ No

(If Yes, fill out the Adverse Event Form and contact to CRO accordingly)

**Any Protocol Deviation?**☐ Yes ☐ No

(If Yes, fill out the Protocol Deviation Report and contact to CRO accordingly)

**Any Device Deficiencies to be Reported?**☐ Yes ☐ No

(If Yes, fill out the Device Deficiency Report and contact to CRO accordingly)

**Is subject Exit the study?**☐ Yes ☐ No

(If Yes, fill out Exit form and collect all study lenses)

**I am accepting the data pertaining to this subject to be complete and accurate.****Date:** \_\_\_\_/\_\_\_\_/\_\_\_\_ (MM/DD/YYYY)**Time:** \_\_\_\_:\_\_\_\_ (HH:MM, 24h)**Investigator Printed name of the signer**\_\_\_\_\_**Signature**\_\_\_\_\_

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# Exit Form

## Exit Form

Subject ID: \_\_\_\_\_

Date: \_\_\_\_/\_\_\_\_/\_\_\_\_ (MM/DD/YYYY)

Principal Investigator: \_\_\_\_\_

Clinical Investigator: \_\_\_\_\_

Did the subject complete the study? ☐ Yes ☐ No

At which visit was the patient exited from the study treatment?

Dispense / Day 7 / Day 14 / Day 30 / Day 60 / Day 91 / Other  
(details \_\_\_\_\_)Reason for Exit from Study (*multiple choice*)

- Completed Visit Schedule
- Patient Decision (Disinterest)
- Investigator Decision
- Lost to Follow up
- Poor Visual Acuity
- Positive Slit Lamp Finding
- Adverse Reaction
- Lens Positioning
- Discomfort
- Handling Problem
- Other (specify) \_\_\_\_\_

I am accepting the data pertaining to this subject to be complete and accurate.

Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

Time: \_\_\_\_:\_\_\_\_ (24hr)

Investigator Printed name of the signer \_\_\_\_\_

Signature \_\_\_\_\_

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# **Adverse Event Form**

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**Adverse Event Form**

Subject ID: \_\_\_\_\_

Date: \_\_\_\_\_ (MM/DD/ YYYY)

Time: \_\_\_\_\_ (HH:MM, 24h)

Principal Investigator: \_\_\_\_\_

Clinical Investigator: \_\_\_\_\_

Indicate Visit: Baseline / Day 7 / Day 14 / Day 30 / Day 60 / Day 91 /

Other (please explain the time in investigation from dispensing \_\_\_\_\_)

Date of Dispensing: \_\_\_\_\_

Type of Report: ☐ Initial AE    ☐ AE Follow-up ( Number of Days following the initial AE Visit: \_\_\_\_\_ )

Adverse events should be differentiated into device related and non-device related. Any corneal infiltrate, ulcer, neovascularization, etc. shall be presumed to be device related unless the case history clearly indicates some other origin. All corneal ulcers shall be recorded in the study report.

Type of Adverse Event: \_\_\_\_\_

<b><u>Classification</u></b>	<b><u>Definition and condition</u></b>	<b><u>Reporting</u></b>
<b>Serious Adverse Events (SAE)</b>	<p>Serious Adverse Device Events are those events that result in, or have potential to cause, either permanent impairment of an ocular function or damage to an ocular structure, and may necessitate medical or surgical intervention.</p> <p>Serious AEs may include any hazardous, sight-threatening conditions occurring after exposure to test article, including but not limited to the following.</p> <p>a) A presumed infectious ulcer (defined as a progressive erosion of the corneal tissue). Signs may include irregular focal infiltrates (&gt; 1 mm); active lesions with raised edges; significant diffuse infiltration; anterior corneal to mid-stromal involvement; erosion with overlying staining; conjunctival and lid edema; anterior chamber reaction (iritis); severe bulbar and limbal redness. Symptoms associated with a presumed infectious ulcer (microbial keratitis) may include pain of rapid onset; severe redness; purulent or mucopurulent discharge; tearing; photophobia. For the purposes of reporting, a corneal ulcer which has any of the following characteristics should be considered in this category:</p>	<p>Notify sponsor as soon as possible, <b>within 24 hrs;</b> IRB and FDA reporting as per requirements</p>

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	<p>1) central or paracentral location;  2) penetration of Bowman's membrane;  3) infiltrate &gt; 2 mm diameter;  4) associated with iritis <math>\geq</math> grade 2;  5) associated with any increase in intraocular pressure;  6) culture positive for microorganisms;  7) increasing size or severity at subsequent visits.</p> <p>b) Any central or paracentral corneal event (such as vascularization) that results in permanent opacification.</p> <p>c) Any serious adverse ophthalmic events including hypopyon and hyphema.</p> <p>d) Any neovascularization within the central 6 mm of the cornea.</p> <p>e) The loss of two or more lines of visual acuity that fail to resolve.</p> <p>f) All cases of iritis.</p>	
<b>Significant but non-serious adverse events</b>	<p>Significant but non-serious AEs should include, but not be limited to:</p> <ul style="list-style-type: none"> <li>— peripheral non-progressive non-infectious ulcers;</li> <li>— all symptomatic corneal infiltrative events;</li> <li>— all cases of corneal staining greater than or equal to grade 3;</li> <li>— a temporary loss of ten or more letters of best spectacle corrected visual acuity (for greater than or equal to 2 weeks);</li> <li>— cases greater than or equal to grade 2 neovascularization;</li> <li>— any ocular event that necessitates temporary lens discontinuation of greater than or equal to 2 weeks;</li> <li>— lens adhesion or lens binding to the cornea;</li> <li>— significantly distorted corneal topography (significant distortion of keratometry mires or aberrant findings in corneal topography);</li> <li>— any ocular AE that requires the practitioner's intervention, including medication (not including minimal lubrication).</li> </ul>	<p>Notify sponsor as soon as possible, <b>no later than 10 business days</b>; IRB and FDA reporting as per requirements</p>
<b>Unanticipated Adverse Device Effects (UADE)</b>	<p>Unanticipated adverse device effect means any serious adverse effect on health or safety or any life-threatening problem or sight-threatening, or death caused by, or associated with, a device, if that effect, problem, or death was not previously identified in nature, severity, or degree of incidence in the investigational plan or application (including a supplementary plan or application), or any other unanticipated serious problem associated with a device that relates to the rights, safety, or welfare of subjects.</p>	<p>Notify sponsor and IRB as soon as possible, <b>but no later than 10 business days, if events that are fatal or life threatening, report immediately</b>; IRB and FDA</p>

		reporting as per requirements
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Date of Occurrence: \_\_\_\_/\_\_\_\_/\_\_\_\_ (MM/DD/ YYYY)

Date First AE is Observed by Investigator: \_\_\_\_/\_\_\_\_/\_\_\_\_ (MM/DD/ YYYY)

Date of Resolution: \_\_\_\_/\_\_\_\_/\_\_\_\_ (MM/DD/ YYYY)

Duration of Event: \_\_\_\_\_ days

Eye Involved: OD / OS /OU

**Clinical Observations**

Describe event including slit lamp observation

Diagnosis: \_\_\_\_\_

**List of Acuities at Visits (logMar VA)**

	Uncorrected VA		Contact Lens Corrected VA		Best Corrected VA		Pinhole VA if needed	
	OD	OS	OD	OS	OD	OS	OD	OS
Baseline								
Beginning of Event								
Poorest Acuity during Event								
At Resolution or Final Visit Seen								

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**Severity:** \_\_\_\_\_ 1 = Mild 2 = Moderate 3 = Severe 4 = Life-Threatening

**If applicable, were images captured for documentation of the AE?** ☐ Yes ☐ No

**AE Treatment:** select all that applies

- 0 = None
- 1 = Study device replacement/modification
- 2 = Medical intervention
- 3 = Culturing
- 4 = Study device discontinued for \_\_\_\_ time period
- 5 = Hospitalization
- 6 = Other

Describe details including relevant tests/laboratory data with dates

**Outcome of AE / Resolution Status:**

- 0 = Resolved without sequelae
- 1 = Recovered with minor impairment / sequelae
- 2 = Recovered with major impairment / sequelae
- 3 = Ongoing/Continuing treatment without sequelae
- 4 = Ongoing/Continuing treatment with sequelae
- 5 = Condition worsening
- 6 = Death
- 7 = Unknown
- 8 = Other

Describe details including relevant tests/laboratory data with dates

**Other Relevant History, including Preexisting Medical Conditions**

Describe

**Study Device Relationship:** 0 = Unrelated (clearly not related to the study device)

1 = Unlikely related (doubtfully related to the study device)

2 = Possibly related (may be related to the study device)

3 = Probably related (likely related to the study device)

4 = Definitely related (clearly related to the study device)

Describe details

**Is this Ocular event?**

☐ Yes ☐ No

**Is this an Unanticipated Adverse Effect?**

☐ Yes ☐ No

**Is this a Serious Adverse Event?**

☐ Yes ☐ No

(If yes, complete paper SAE form and report to IRB and CRO as soon as possible)

**Is this Significant but non-serious Adverse Event?**

☐ Yes ☐ No

**Did Subject Continue in Study?**

☐ Yes ☐ No

(If Yes, fill out the Protocol Deviation Report and contact to CRO accordingly)

**Reportable to CRO/Sponsor?** ☐ Yes ☐ No

**When?** \_\_\_\_/\_\_\_\_/\_\_\_\_ (MM/DD/YYYY)

**Reportable to IRB/FDA?** ☐ Yes ☐ No

**When?** \_\_\_\_/\_\_\_\_/\_\_\_\_ (MM/DD/YYYY)

**I am accepting the data pertaining to this subject to be complete and accurate.**

**Date:** \_\_\_\_\_ **Time:** \_\_\_\_\_

**Investigator Printed name of the signer** \_\_\_\_\_

**Signature** \_\_\_\_\_

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# **Protocol Deviation Report**

## Protocol Deviation Report

Subject ID: \_\_\_\_\_

Date: \_\_\_\_\_ (MM/DD/ YYYY)

Time: \_\_\_\_\_ (HH:MM, 24h)

Principal Investigator: \_\_\_\_\_

Clinical Investigator: \_\_\_\_\_

Indicate Visit: Dispense V / Day 7 / Day 14 / Day 30 / Day 60 / Day 91 /

Other (please explain the time in investigation from dispensing \_\_\_\_\_)

Date of Deviation: \_\_\_\_/\_\_\_\_/\_\_\_\_ (MM/DD/ YYYY)

### Description

### Reason

Result in AE?

☐ Yes☐ No

Did Subject Continue in Study?

☐ Yes☐ No

### Corrective Action

Please describe what action(s) you have taken to prevent recurrence of this deviation in the future:

Reportable to IRB/FDA?

☐ Yes☐ No

When? \_\_\_\_/\_\_\_\_/\_\_\_\_ (MM/DD/ YYYY)

I am accepting the description to this subject to be complete and accurate.

Clinical investigator Name (Printed) \_\_\_\_\_

Investigator Signature \_\_\_\_\_

Date: \_\_\_\_\_

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# Device Deficiency Form

## Device Deficiency Form

Subject ID: \_\_\_\_\_

Date: \_\_\_\_\_ (MM/DD/YYYY)

Time: \_\_\_\_\_ (HH:MM, 24h)

Principal Investigator: \_\_\_\_\_

Clinical Investigator: \_\_\_\_\_

Indicate Visit: Dispense V / Day 7 / Day 14 / Day 30 / Day 60 / Day 91 /

Other (please explain the time in investigation from dispensing \_\_\_\_\_)

**Device Detail (type of device)**

--

Date of Occurrence: \_\_\_\_/\_\_\_\_/\_\_\_\_ (MM/DD/YYYY)

**Description of Deficiency**

a) Is this a deficiency with respect to identity, quality, durability, reliability, safety or performance of the device?

☐ Yes☐ No

b) Is the deficiency due to a malfunction, use error or inadequate labeling?

☐ Yes☐ No

c) Did the deficiency lead to an Adverse Event?

☐ Yes☐ No

d) Did the deficiency lead to unmasking of the device?

☐ Yes☐ No**Action Taken**

--

I am accepting the description to this subject to be complete and accurate.

Clinical investigator Name (Printed) \_\_\_\_\_

Investigator Signature \_\_\_\_\_

Date: \_\_\_\_\_

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## **Appendix 4**

### **Culture Procedures**

## CULTURE PROCEDURES

Introduction:

During the clinical studies when cultures must be taken, the following procedures should be followed: If a clinical lesion is present, cultures should be made by scraping the lesion with a platinum spatula. If cultures of the cornea or corneal surface are required as determined by the judgment of the investigator, the lids, conjunctiva, and cornea should be cultured according to the procedure given in Brinser, John H. and Avery Weiss, "Laboratory Diagnosis in Ocular Disease," Chapter 1 in Duane's Clinical Ophthalmology, Volume 4, edited by William Tasman, Hagerstown, MD.: Harper and Row, 1992, and Gerbert C. Rebell and Richard K. Forster "Fungi of Keratomycoses," Manual of Clinical Microbiology, edited by Edwin H. Lennette, Earle H. Spaulding and Joseph P. Truant, American Society for Microbiology, Washington, D.C., 1980. Cultures should be made on blood agar, chocolate agar incubated in a candle jar or equivalent, and Sabouraud's dextrose agar containing 50 micrograms per ml of gentamicin or chloramphenicol. Cultures should be inoculated on the solid media directly from the patient and immediately placed under the atmospheric conditions for incubation. Use of transport holding media, thioglycollate, etc. is not recommended. All organisms should be identified to species to the level of competence of a good clinical microbiology laboratory employing the Minitex or API systems, or their equivalent, and meeting microbiology proficiency test standards. The number of colonies of each species isolated should be recorded approximately.

If, in the judgment of the investigator, cultures of the cornea or corneal surface are not required, cultures of the lids and quantitative cultures of the cul-de-sac should be obtained as follows:

I. Cul-de-sac Cultures

- A. A sterile calcium alginate swab is moistened in sterile buffered solution or trypticase soy broth.
- B. Obtain culture inoculum from cul-de-sac by holding lids open, asking the patient to look upward, and without touching the lids with the swab, place swab in cul-de-sac and rotate it 360° around the axis of the stick.
- C. Drop swab into 2.5 ml of sterile phosphate buffered saline solution (Ph 7.2) containing 20% glycerol for immediate transport to the laboratory (maximum time 2 hours). The swab should be cut off just above the calcium alginate portion with sterile scissors and the cut portion allowed to drop into the tube of transport media. This will eliminate contamination of the sample with the stick.
- D. Immediately vortex-mix and make  $10^{-1}$  and  $10^{-2}$  dilutions in sterile buffer.



- E. Pass 1.0 ml of the remaining undiluted sample through a membrane filter and, using sterile forceps, place the membrane filter on a chocolate agar plate (CAP).
- F. (1) From each of the well-mixed  $10^{-1}$  and the  $10^{-2}$  dilutions, pass 1.0 ml through membrane filters and, using sterile forceps, place each of these membrane filters on a chocolate agar plate.  
  
(2) Secondly, from each of the  $10^{-1}$  and the  $10^{-2}$  dilutions, pass 1.0 ml through membrane filters and, using sterile forceps, place each of these membrane filters on a blood agar plate (BAP).  
  
(3) Finally, from each of the  $10^{-1}$  and the  $10^{-2}$  dilutions, pass 1.0 ml through membrane filters and, using sterile forceps, place each of these membrane filters on a Sabouraud's dextrose agar (SAB) plate (containing antibiotics).
- G. Incubate all chocolate agar plates in a  $\text{CO}_2$  enriched atmosphere for 48 hours at  $37^\circ\text{C}$ . Incubate the blood agar plates aerobically (F.(2) above) and, if necessary, anaerobically (F.(4) above) for 48 hours at  $37^\circ\text{C}$ . Incubate the Sabouraud's dextrose agar plates (containing antibiotic) at ambient temperature (approximately  $25^\circ\text{C}$ ) for 2 weeks.
- H. Count all organisms, correcting for dilution, and identify all organisms to species to the current state-of-the-art attained by a competent clinical microbiology laboratory. Identify all isolates of Staphylococcus aureus by the coagulase test.

## II. Lid Cultures

- A. Moisten a sterile calcium alginate swab in sterile buffer or trypticase soy broth.
- B. Obtain a culture inoculum from the margin of the lower lid by drawing the swab along the margin of the lid.
- C. Place the swab in a minimum volume (0.5 ml) of sterile phosphate saline (Ph 7.2) containing 20% glycerol and immediately transport to the laboratory.
- D. Plate the inoculum and streak out on blood agar (aerobic), chocolate agar ( $\text{CO}_2$  atmosphere), and Sabouraud's dextrose agar with gentamicin or chloramphenicol. Alternatively, the inoculum may be inoculated directly from the patient to the solid media.
- E. After 48 hours incubation identify the species isolated and the relative number of colonies of each present.

### III. Lens Cultures

- A. The lens is removed from the eye with the investigator's hand protected by a sterile glove (without talc). The lens is immersed in a dilute peptone solution or in a sterile phosphate buffered saline solution (Ph 7.2) containing 20% glycerol and agitated with a vortex mixer. The lens is retrieved with a sterile forceps. The vortexed solution can then be used for membrane filter counts and streaked onto plate media for identification of organisms, similar to the eye culture.
- B. If the patient has an inflamed eye and is not wearing the lens when he comes in for examination, first the eye is cultured, then the lens from the case, then the solution in the case and the lens case.

In this instance, remove the lens with sterile forceps and culture as above.

### IV. Lens Case Solutions

For purpose of evaluation it is necessary that a careful record be kept of lens case cultures in which the lens was not being worn but was still in the case and lens case cultures made after the lens had been removed and was being worn by the patient.

- A. The entire volume of the solution should be cultured with a technique such as membrane filter.
- B. If the fluid contains a preservative, the solution in the case should be mixed into an equal volume of trypticase soy broth containing Azolectin-Tween 80 (or phosphate buffer solution with Tween 80), allowed to stand for 20 minutes and then cultured by the membrane filter method. Other suitable methods of neutralization may be used (e.g., DE system or neutralization by dilution).
- C. The membrane filter disk may be aseptically cut in two and half put on a blood agar plate and the other half on a Sabouraud's dextrose agar slant containing antibiotic.

### V. Lens Case

- A. The lens case should be rinsed with a non-ionic surfactant-containing diluent and the entire volume cultured to recover low numbers.
- B. Culture as in IV A and C above.

## ALTERNATE CULTURE PROCEDURE

### I. Cul-de-sac Cultures

- A. A sterile calcium alginate swab is moistened in sterile buffered solution or trypticase soy broth.
- B. Obtain culture inoculum from cul-de-sac by holding lids open, asking the patient to look upward, and without touching the lids with the swab, place swab in cul-de-sac and rotate it 360° around the axis of the stick.
- C. Drop swab into 2.5 ml of sterile phosphate buffered saline solution (pH 7.2) containing 20% glycerol for immediate transport to the laboratory (maximum time 2 hours). The swab should be cut off just above the calcium alginate portion with a sterile scissor and the cut portion allowed to drop into the tube of transport media. This will eliminate contamination of the sample with the stick.
- D. Immediately vortex-mix and make  $10^{-1}$  and  $10^{-2}$  dilutions in sterile buffer.
- E. Using a sterile pipette, syringe, or dropper, inoculate one plate each of blood agar, chocolate agar and a Sabouraud's dextrose agar slant with gentamicin or chloramphenicol, with one drop of the undiluted sample and streak out for isolation of colonies.
- F. Pass the remaining undiluted sample, and the  $10^{-1}$  and  $10^{-2}$  dilutions through each of three membrane filters. Using a sharp sterile scalpel cut each of the filters into three or four pie-shaped sections and place them on the selection of culture media designated above, namely blood agar (aerobic), chocolate agar ( $\text{CO}_2$  enriched atmosphere), Sabouraud's dextrose agar with gentamicin or chloramphenicol. Incubate the Sabouraud's agar slant at ambient temperature (27-30°C) for 2 weeks.
- G. Alternatively, if membrane filtration apparatus is unavailable, the remaining undiluted sample and 1 ml of the  $10^{-1}$  and  $10^{-2}$  dilutions each should be plated to the 3 or 4 culture media as designated in F above and spread evenly over the agar surface.
- H. Incubate all plate cultures for 48 hours and count and identify all organisms to species to the current state of the art attained by a competent clinical microbiology laboratory. Identify all isolates of Staphylococcus aureus by the coagulase test.

### II. Lid Cultures

- A. Moisten a sterile calcium alginate swab in sterile buffer or trypticase soy broth.
- B. Obtain a culture inoculum from the margin of the lower lid by drawing the swab along the margin of the lid.

- C. Place the swab in a minimum volume (0.5 ml.) of sterile phosphate saline (pH 7.2) containing 20% glycerol and immediately transport to the laboratory.
- D. Plate the inoculum and streak out on blood agar (aerobic), chocolate agar (CO<sub>2</sub> atmosphere), and Sabouraud's dextrose agar with gentamicin or chloramphenicol. Alternatively, the inoculum may be inoculated directly from the patient to the solid media.
- E. After 48 hours incubation identify the species isolated and the relative number of colonies of each present.

### III. Lens Cultures

- A. The lens is removed from the eye with the investigator's hand protected by a sterile glove (without talc). The lens is immersed in a dilute peptone solution or in a sterile phosphate buffered saline solution (pH 7.2) containing 20% glycerol and agitated with a vortex mixer. The lens is retrieved with a sterile forceps. The vortexed solution can then be used for membrane filter counts or streaked onto plate media for identification of organisms, similar to the eye culture.
- B. If the patient has an inflamed eye and is not wearing the lens when he comes in for examination, first the eye is cultured, then the lens from the case, then the solution in the case and the lens case.

In this instance, remove the lens with sterile forceps and culture as above.

### IV. Lens Case Solutions

For purpose of evaluation it is necessary that a careful record be kept of lens case cultures in which the lens was not being worn but was still in the case and lens case cultures made after the lens had been removed and was being worn by the patient.

- A. The entire volume of the solution should be cultured with a technique such as membrane filter.
- B. If the fluid contains a preservative, the solution in the case should be made into an equal volume of trypticase soy broth containing Azolectin-tween 80 (or phosphate buffer solution with tween 80), allowed to stand for 20 minutes and then cultured by the membrane filter method. Other suitable methods of neutralization may be used (e.g., DE system or neutralization by dilution).
- C. The membrane filter disk may be aseptically cut in two and half put on a blood agar plate and the other half on a Sabouraud's dextrose agar slant containing antibiotic.

### V. Lens Case

- A. The lens case should be rinsed with a non-ionic surfactant-containing diluent and the entire volume cultured to recover low numbers.
- B. Culture as in IV A and C above.