CORPORATE OVERVIEW

Q2 2022

KIORA PHARMACEUTICALS

NASDAQ: KPRX

Forward Looking Statements

Some of the statements in this press release are "forward-looking" and are made pursuant to the safe harbor provision of the Private Securities Litigation Reform Act of 1995. These "forward-looking" statements include statements relating to, among other things, the development and commercialization efforts and other regulatory or marketing approval efforts pertaining to Kiora's products, including KIO-101, KIO-201 and KIO-301, as well as the success thereof, with such approvals or success may not be obtained or achieved on a timely basis or at all. These statements involve risks and uncertainties that may cause results to differ materially from the statements set forth in this press release, including, among other things, market and other conditions and certain risk factors described under the heading "Risk Factors" contained in Kiora's Annual Report on Form 10-K filed with the SEC on March 25, 2021 or described in Kiora's other public filings. Kiora's results may also be affected by factors of which Kiora is not currently aware. The forward-looking statements in this press release speak only as of the date of this press release. Kiora expressly disclaims any obligation or undertaking to release publicly any updates or revisions to such statements to reflect any change in its expectations with regard thereto or any changes in the events, conditions, or circumstances on which any such statement is based, except as required by law.

Addressing Unmet Needs in Eye Care

Compelling Value Proposition

New Leadership – Renewed Focus

- Efficient investment to clinical inflection points

Large & Underserved Market Opportunities

- Transformative and reprioritized pipeline

Diversified Portfolio

Revolutionary small molecule with the potential to restore vision in patients with inherited or age-related retinal degeneration

- Unique small molecule MOA restores light perception
- *Entering Ph1b in Q3 2022*

Small molecule DHODH inhibitor to treat immunologic eye disease

- Validated disease modifying target in rheumatology
- *Ph1b trial reported safety, tolerability and significant reduction in clinical sign*

Eye drop to accelerate ocular wound healing and protect the ocular surface

- Next generation cross-linked hyaluronic acid (HA)
- *Ph3b ready*

Kiora's Pipeline Targets Well Defined Ophthalmic Indications (Rare & Large Populations)

Indication	Product Delivery Route	Development Stage			
		Pre-clinical	Phase 1	Phase 2	Phase 3
Posterior Segment					
Retinitis Pigmentosa (Mutation Agnostic)	KIO-301* IVT				
Anterior Segment					
Ocular Presentation of Rheumatoid Arthritis (OPRA)	KIO-101 Eye Drop				
PRK Surgical Recovery	KIO-201 Eye Drop				

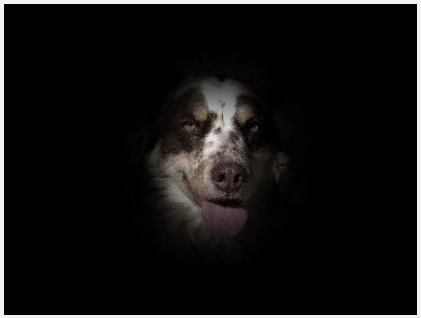
* - ODD granted March 2022

KIO-301

Small Molecule Photoswitch for Retinal Reanimation

Retinitis Pigmentosa (RP)

Orphan Blindness Disease with No Available Therapeutics



Prevalence

- 1:3,000-1:5,000 (Orphan Disease)

Etiology

- 50+ genetically distinct subtypes from 150+ mutations
- Inherited disease

Clinical Presentation

- Night blindness, reduced visual field range and eventual loss of central vision
- Visual acuity declines

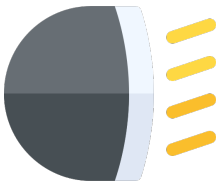
Diagnosis

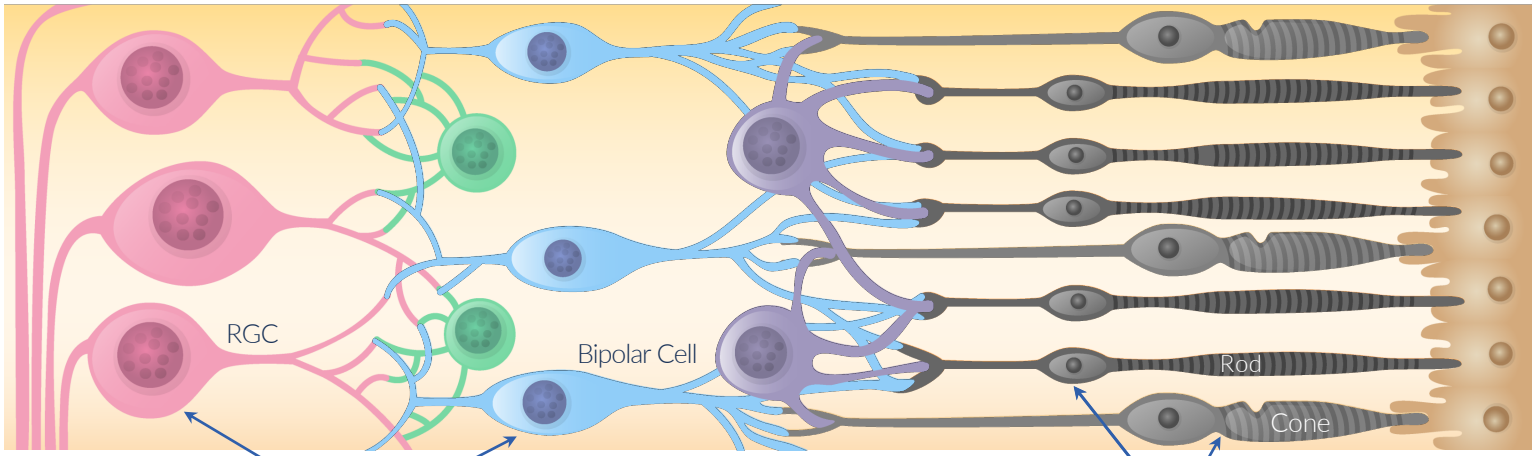
- Retinal exam (black bone-spicule pigmentation)
- ERG provides definitive diagnosis
- Genetic testing

KIO-301 is mutation agnostic

American Academy of Ophthalmology

RP – Degeneration of Photoreceptors Whilst Downstream Neurons Remain Viable





To the brain
(connection intact)

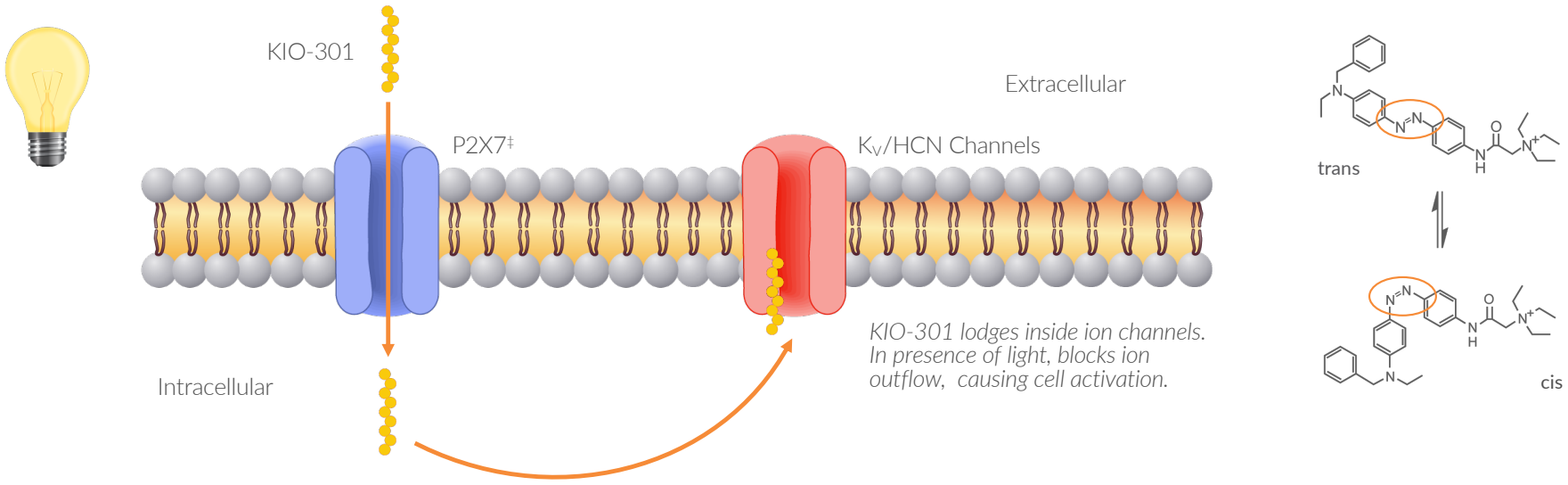
Bipolar cells and RGCs relay signal from rods and cones to the brain, where the image is "processed"

Photoreceptors (rods and cones) sense light and pass the signal to special transmitting cells

- Normal human retina has about 120 million rods (black & white, night vision, movement) and 6 million cones (color)
- Photoreceptors die (rods first, then cones), unable to activate Bipolar cells and Retinal Ganglion Cells (RGCs)
- Bipolar cells and RGCs remain intact and retain ability to send signals to the brain

KIO-301 Turns RGCs “ON” in the Presence of Light

1. In RP, photoreceptors are no longer viable and therefore their companion “signal” cells (RGCs) are not capable of being activated
2. KIO-301 preferentially enters these RGCs and turns them “ON” in the presence of light*

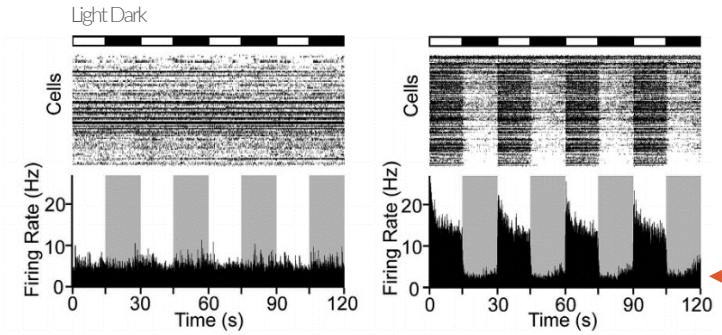


‡ P2X7 solely expressed on RGCs and amacrine cells in the retina
* Visual light causes shape change of KIO-301 (trans ⟶ cis), blocking the movement of positively charged ions out of the cell through the K_V/HCN channels. This build up of charged ions in the cell triggers activation (phototransduction signaling) to the brain.

Neuron. 92, 100-113 (2016)

KIO-301: Selectivity in Diseased Retinas

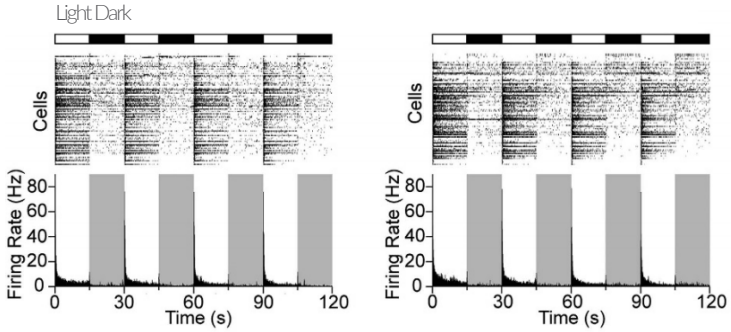
Diseased Retina



Neural response to light

KIO-301 is selective for RGCs in Degenerating Retinas

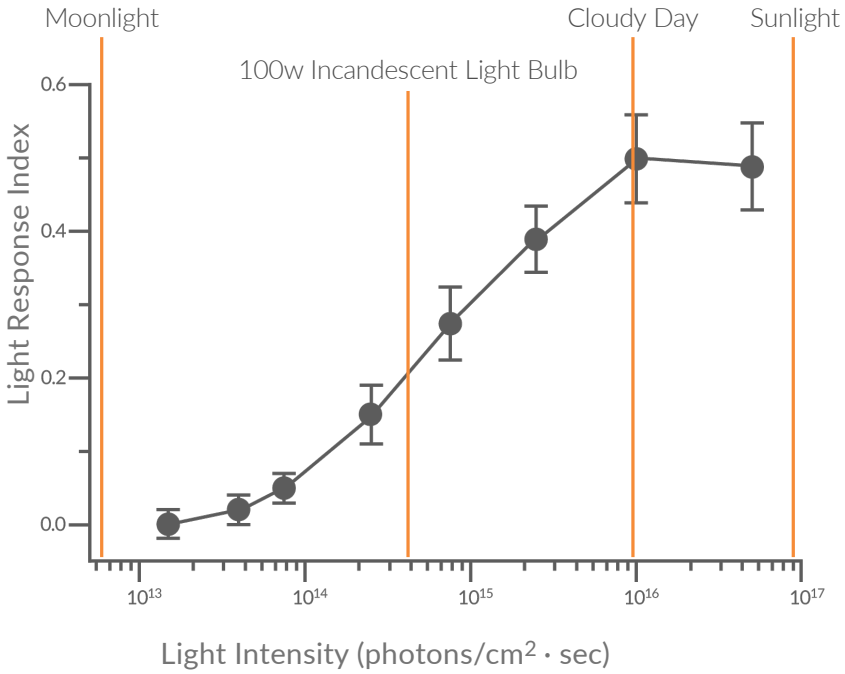
Normal Retina

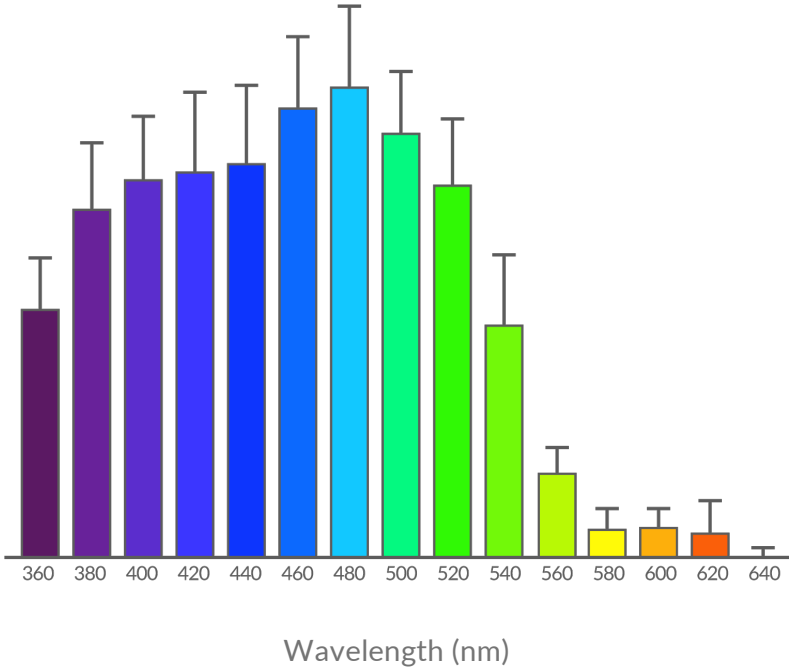


Sci. Rep. 7, 45487 (2017)

KIO-301 could restore vision in daily-life regular settings

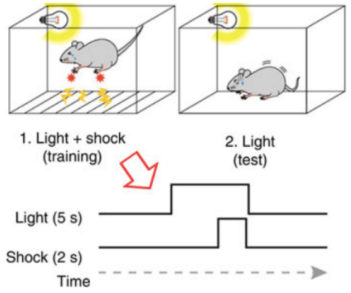
Molecule sensitive to a broad spectrum of intensity and wavelength

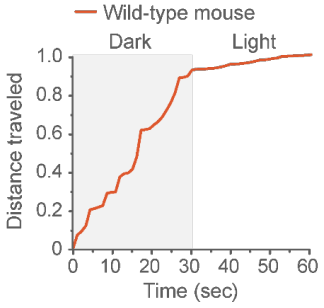


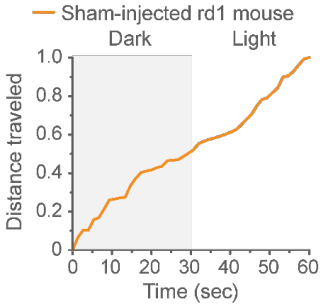


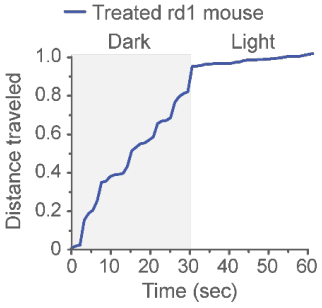
Sci. Rep. 7, 45487 (2017), Banghart, Trauner et al (2008)

BENAQ – Behavioural Changes in Diseased Mice









Distance traveled is a relative measure

N=10 mice/group

Mice evaluated after IVT inj

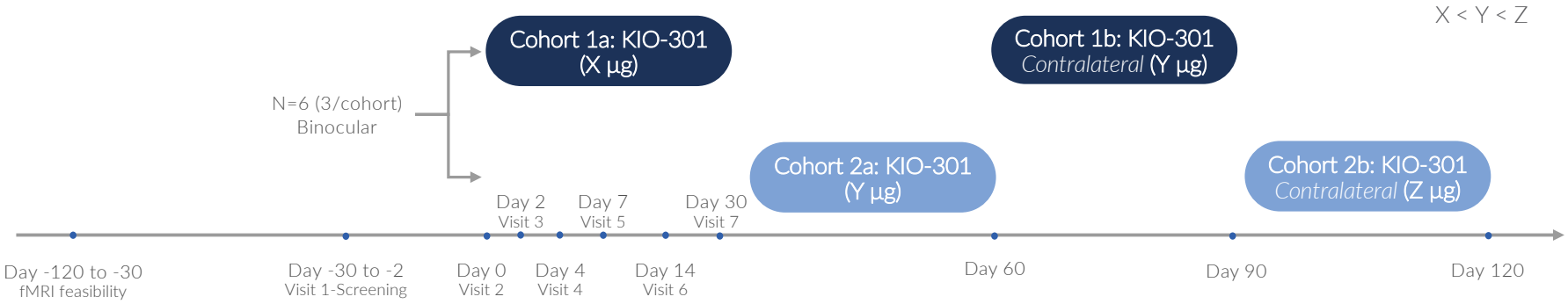
rd1 mouse has an inherited gene mutation causing similar retinal degeneration as observed in RP patients.

This study used a predecessor molecule that behaves similarly to BENAQ, but less potent and shorter in vivo half-life.

Neuron. 81, 800-813 (2014)

KIO-301: Phase 1b Study Design

Open Label, Single Ascending Dose Trial – Single Site (Royal Adelaide Hospital, Australia)



Study Design

- Two cohorts, non-randomized, open-label, single IVT dose
- Cohort 1- NLP/LP patients; Cohort 2 – HM/CF patients

Outcome Measures

- Primary - AEs, PK & labs
- Secondary - **Assessment days repeated for each cohort per eye;** object identification, intensity, contrast assessment, etc.

Planned Timelines

- Study start in Q3 2022
- Cohort 1 data in Q4 2022
- Topline data in Q1 2023

KIO-101

Potential 1st in Class Treatment for Ocular Presentation of Rheumatoid Arthritis (OPRA)

Ocular Presentation of Rheumatoid Arthritis (OPRA)

Ocular Surface Disease is the Most Common Non-Joint Pathology

"The immune attack on the surface of the eye is a mirror image of what is destroying the joint synovium"
- Sandeep Jain, MD,
Univ of Illinois, College of Med

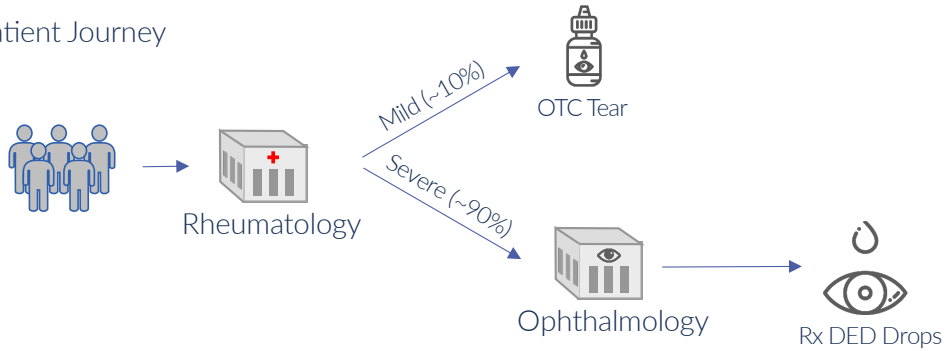
Rheumatoid Arthritis (RA) is a **chronic, systemic autoimmune disease** that primarily effects joint linings, causing swelling, bone erosion and deformity

- No cure exists but symptoms can be managed with disease modifying medications
  - DHODH inhibitors, IL-6, TNF-α antagonists and others

Large unmet need

- 3.3 million people in United States have RA
- >30% of these patients have ocular manifestations (~1.1m)
  - Ocular signs & symptoms are the most common, non-articular manifestations of RA

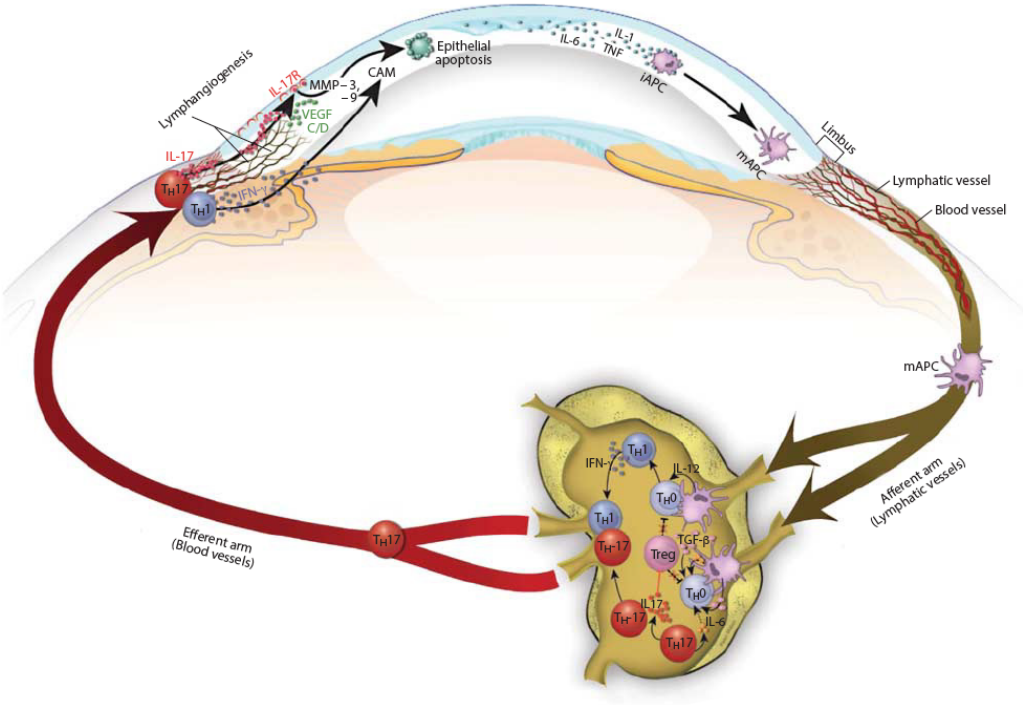
Patient Journey



Rheumatol Int. 2017 Sep;37(9):1551-1557. Eyenet Magazine. 2016 Nov:37-9. IVOS. 2015 Jun;56(7):4437.

OPRA Signs & Symptoms are Mediated by T Cells

KIO-101 acts upstream to inhibit proliferation of T helper cells (Th1 & Th17) in lymph node and on-site to suppress pro-inflammatory cytokine release



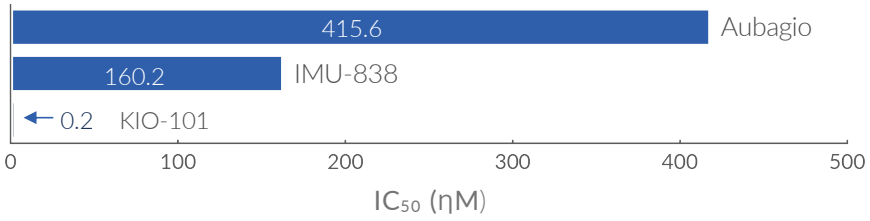
Arch Ophthalmol. 2012 Jan;130(1):90-100

DHODH Inhibitors – Validated Autoimmune Disease Modifying Class

Validated Drug Class for Autoimmune Diseases

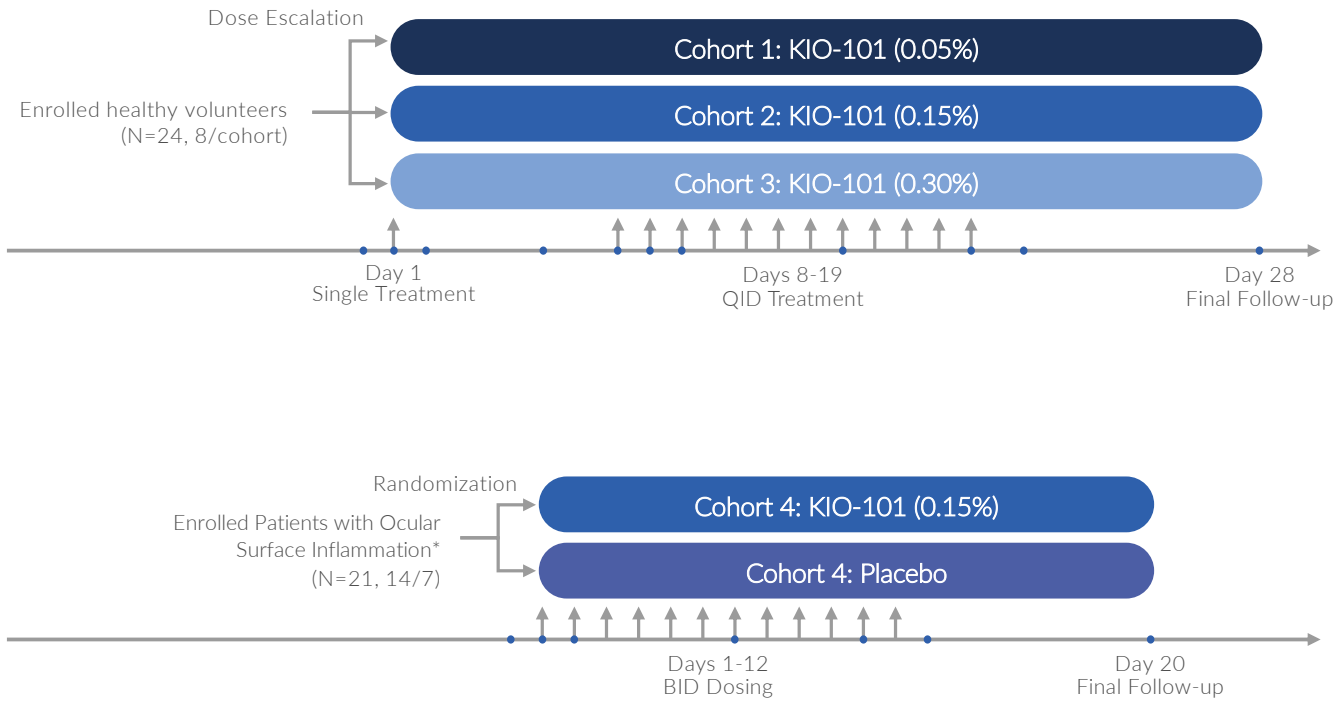
Company	Drug	Status*	Market / Revenue
Sanofi	Arava (leflunomide) Aubagio (teriflunomide)	On market for RA On market for MS	~$2.5B annual revenue Low selectivity and potency results in off-target side effects ▪ Safety concerns of severe liver injury and other adverse events ▪ Black box added regarding the risk of severe liver injury
PTC Therapeutics	PTC299	Ph1b AML Ph2/3 COVID-19	
Immunic	IMU-838	Ph2/3 UC, MS, CD	
ASLAN	ASLAN003	Ph2 autoimmune	
Clear Creek Bio	Brequinar	Ph2 AML Ph2 COVID-19	
Kiora Pharmaceuticals	KIO-101	Ph2 Ocular RA Preclin autoimmune	

*As of Jan 2022



KIO-101 overcomes safety concerns with greater specificity and best in class potency

KIO-101: Exploratory Phase 1b Ocular Surface Inflammation Trial



Key Inclusion Criteria

- Ocular surface inflammation defined by OSDI of at least 22
- Conjunctival hyperemia ≤ Grade 2 on the Efron Scale

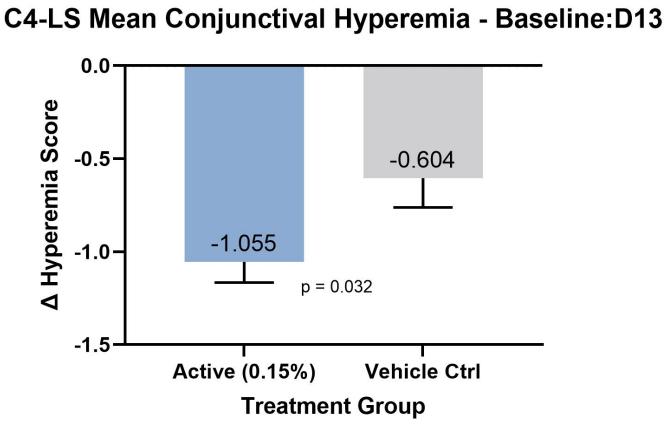
1° & 2° Outcomes

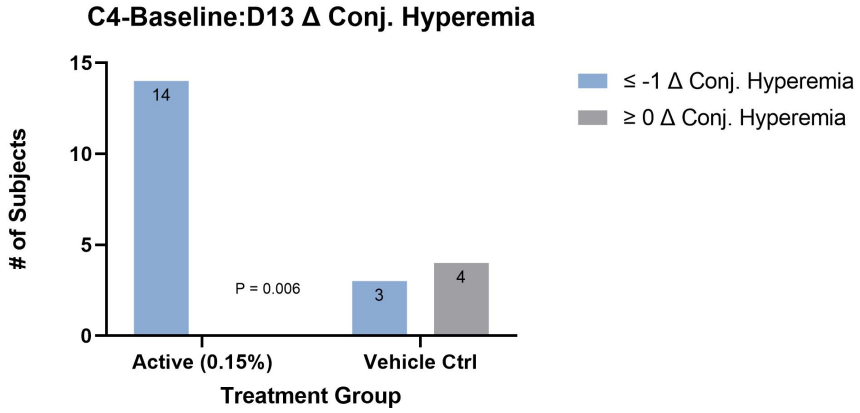
Safety ▪ pK ▪ Exploratory Efficacy Including OSDI, Conjunctival Hyperemia, Corneal Staining, and Tear Break-Up Time

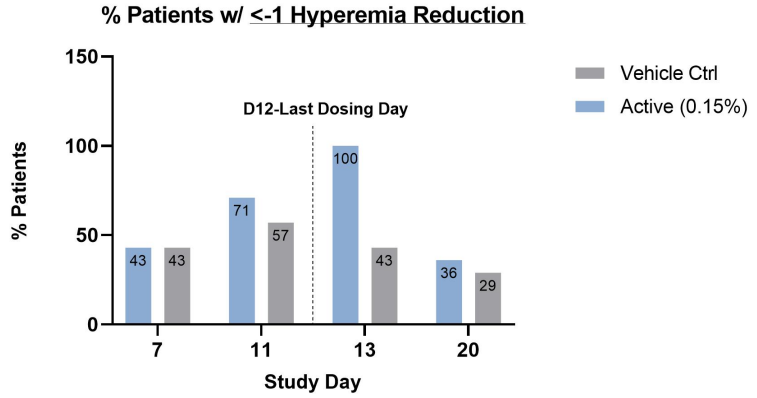
KIO-101-1101
Key Data Summary Slide*

Safety & Tolerability

- Low & mid dose tolerated in healthy & patients with ocular surface inflammation (OSI)
- High dose (0.3%) inconclusive & awaiting sub-chronic tox

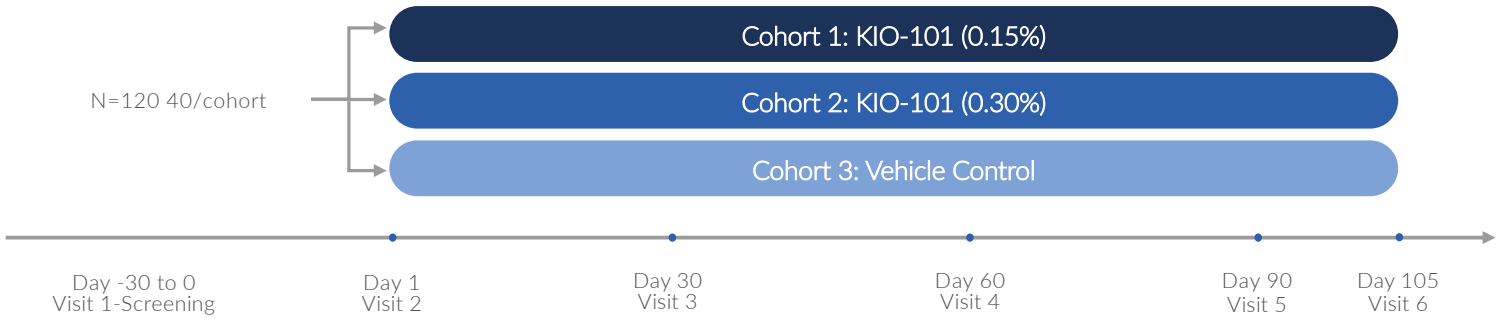






* To be presented April 26th @ American Society of Cataract & Refractive Surgery (ASCRS) Annual Conference

KIO-101-2202: Phase 2 Trial in Patients with Ocular Presentation of Rheumatoid Arthritis ("OPRA")



Study Design
- Three-arm, randomized (1:1:1), controlled, double masked, 90d BID Topical Dosing
- Dx of RA, Conjunctival hyperemia ≥ Grade 2 (Efron Scale), ODS-VAS (>40)

Outcome Measures
- ODS-VAS; Conjunctival hyperemia; Corneal Staining; Papillary & Follicular Hyperplasia
- AEs, PK & labs

Planned Timelines
- Study start in Q3 2022
- Topline data in Q4 2023

KIO-201

Accelerating Ocular Surface Wound Healing

Ocular Surface Diseases

Wounds: Surgery

9%

~5 million US patients

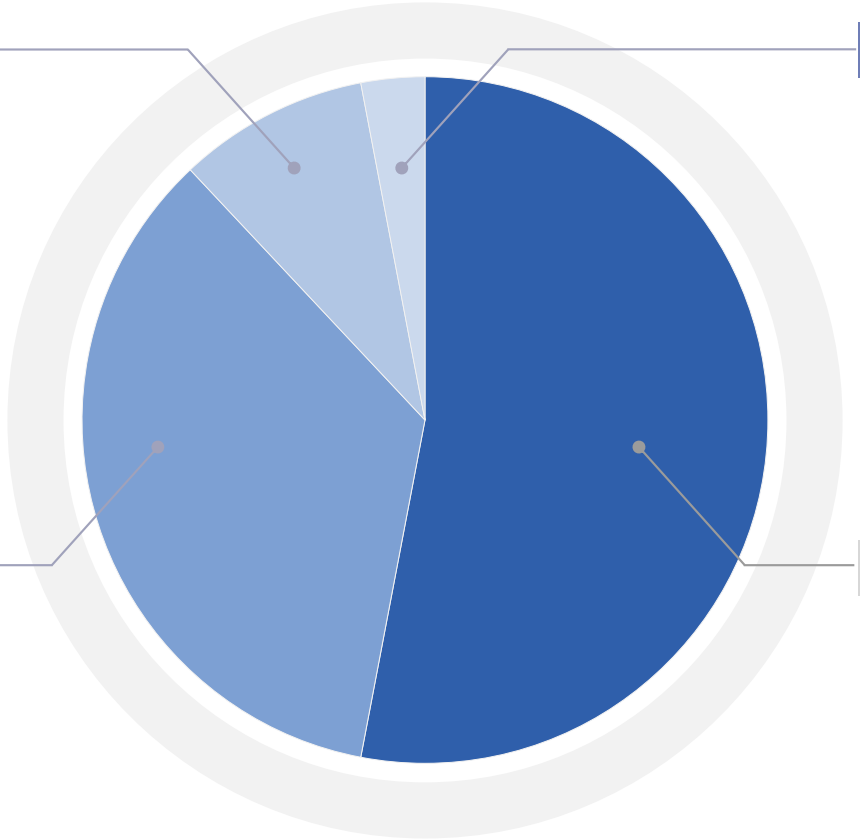
Refractive surgeries (e.g., PRK)
Cataracts
Collagen cross-linking

Wounds: Trauma

3%

~2 million US patients

Injuries/abrasions
Chemical burns
Difficult to heal PED/ulcers



Epitheliopathies: Dry Eye

35%

~18 million US patients

Episodic/mild
Moderate
Severe

Epitheliopathies: Non-Dry Eye

53%

~28 million US patients

Contact lens wear
Ocular irritants
Glaucoma medications

American Academy of Ophthalmology

Refractive Surgery Overview

PRK has Long Surgical Recovery Time

PRK

- PRK is a surgical correction of refractive errors for patients who are not suitable candidates for LASIK due to:
  - Inadequate corneal thickness
  - Larger pupil size
  - Dry eye
  - Anterior basement membrane disease
- PRK involves controlled mechanical removal of corneal epithelium with subsequent lasering of stroma

The Unmet Need

- While PRK yields superior visual results, complications include:
  - Post-operative pain
  - Risk of infection
  - Corneal haze
  - Decreased contrast sensitivity
  - Slower visual recovery
- Standard-of-care is a Bandage Contact Lens (BCL) which can result in subsequent erosion of epithelium

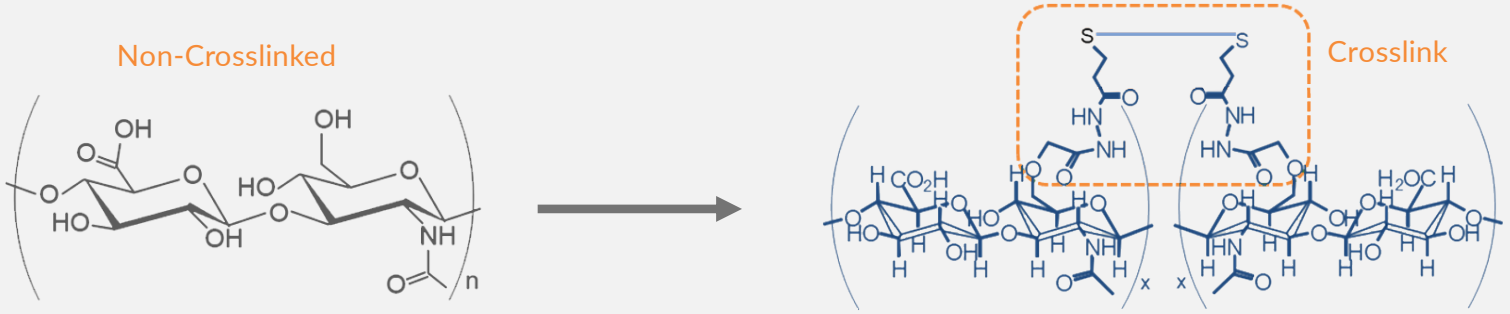
The Opportunity

- Enabling the epithelium to heal faster may mitigate peri-operative complications and improve long-term visual outcomes
- The PRK population is ideal:
  - Large population (~850,000 LASIK/PRK surgeries per year in the US)
  - Large wound (9mm), same size for all patients and known time zero
  - Time to healing well-established

American Academy of Ophthalmology, Ocular Surgery News: April 10, 2019

KIO-201: Unique Attributes Ideal for Ocular Surface Repair

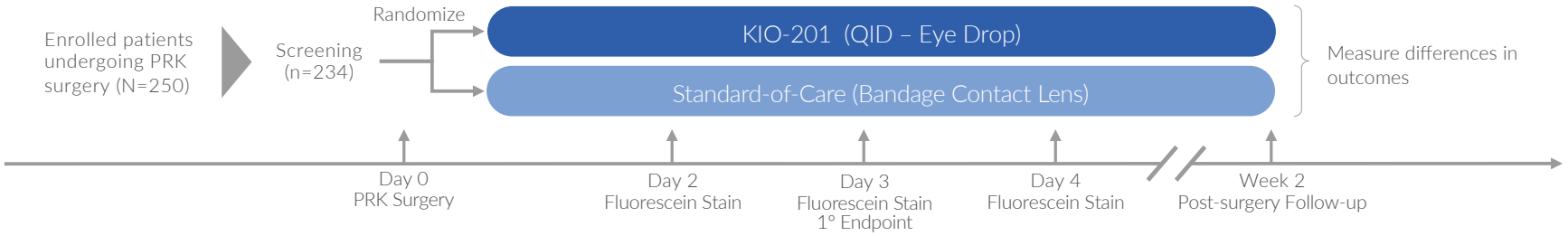
- KIO-201 is based on a modified form of the natural polymer hyaluronic acid (HA)
- HA is a material with a high viscosity that promotes wound healing by enabling enhanced cell migration
- 5 clinical trials completed (3 PRK surgical recovery and 2 dry eye)
  - > Approximately 400 eyes have been treated with KIO-201
  - > Strong safety and efficacy profile



Crosslinking Creates Unique Attributes Ideal for Ocular Surface

- Improved product stability
- Longer retention on the ocular surface over non-crosslinked HA (2 hours vs minutes)
- Able to achieve concentrations up to 7.5x current products
- Decreased viscosity during blinking = no blurred vision

PRK Study Design – Trial Completed



Study Design

- Two-arm, randomized, positive-controlled, masked via reading center

Outcome Measures

- Primary endpoint: Complete corneal re-epithelialization on Day 3 (% of eyes w/ fully closed wound and remain closed)
- Key secondary endpoint: Mean wound size (days 2, 3, 4)

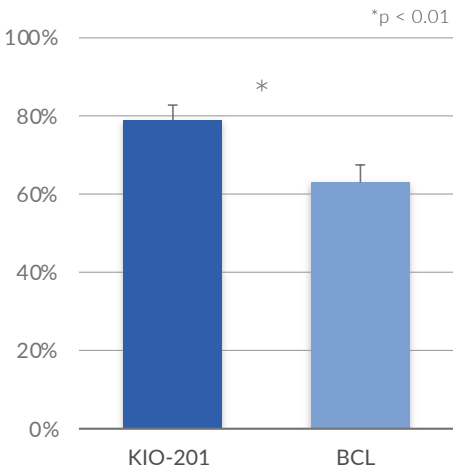
Enrollment

- 250 patients enrolled (9 US sites)
- 234 qualified patients randomized to KIO-201 or BCL group post-surgery (16 screen failures)

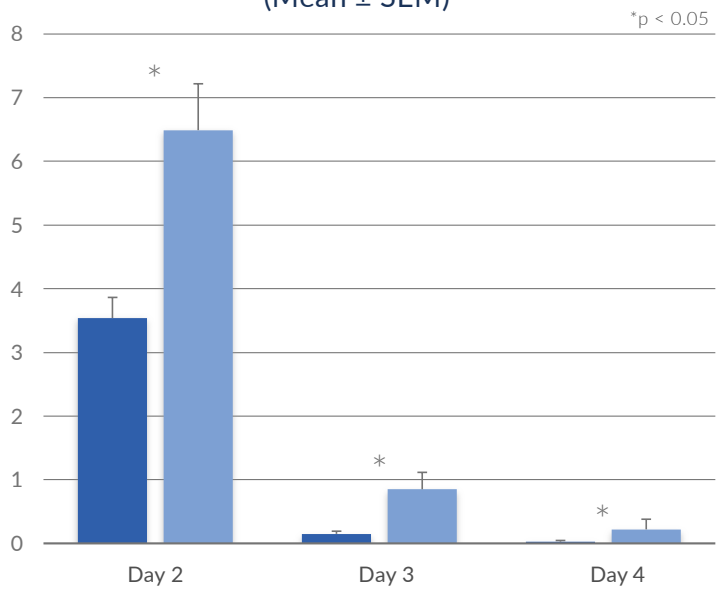
ClinicalTrials.gov Identifier: NCT03938883

KIO-201 Demonstrated Superiority versus BCL

Percent of Patients with Complete Re-Epithelialization Day 3 (Mean ± SEM)



Mean Wound Size (mm^2) (Mean ± SEM)



Recurrent Erosion

- Only 1 (0.9%) study eye in the KIO-201 group had recurrent erosion
- 4 (3.5%) study eyes in the Bandage Contact Lens (BCL) group had recurrent erosion

Corporate Overview

Executive Team

Brian M Strem, PhD
President & CEO

Susan Drexler, CPA
Finance*

Eric J Daniels, MD, MBA
Chief Development Officer

Brenda Mann, PhD
SVP – Research

Stefan Sperl, PhD
EVP – CMC & Operations

Angela Dentiste, MBA
VP – Clinical Operations

** - Interim*

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UW SCHOOL OF MEDICINE

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Daniel Durrie, MD

KU MEDICAL CENTER
The University of Kansas

Paul Karpecki, OD, FAAO

KENTUCKY EYE INSTITUTE

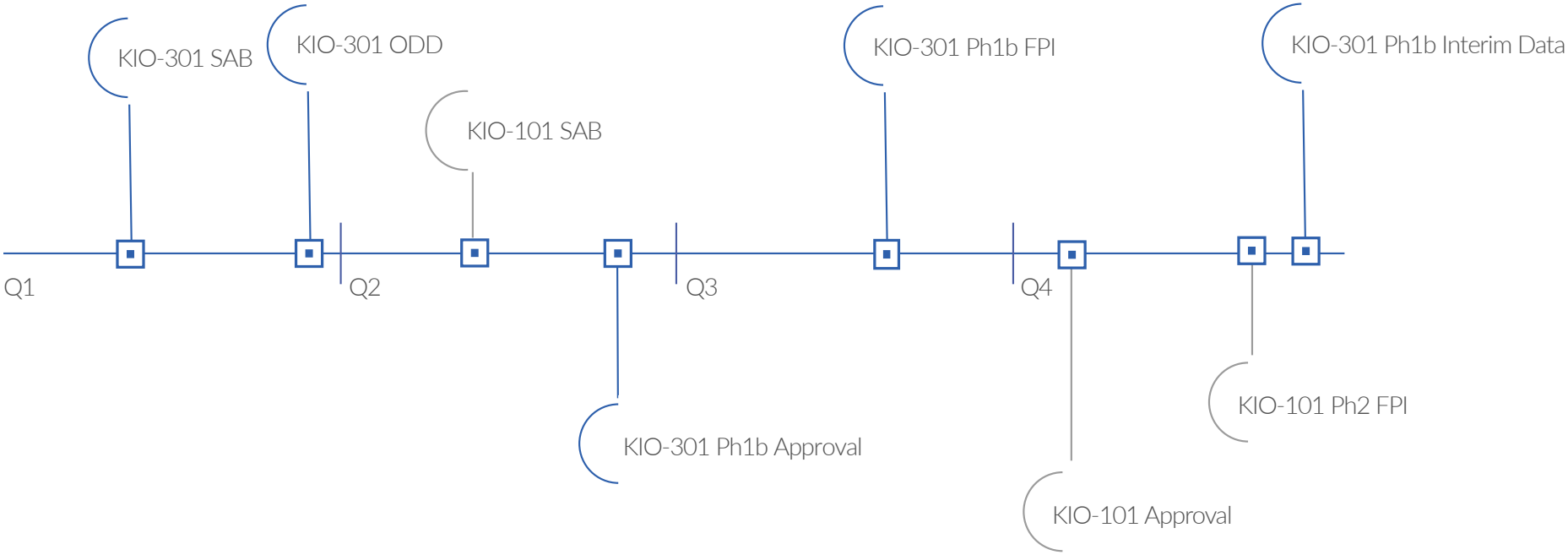
Francis Mah, MD

Scripps

Victor Perez, MD

Duke University School of Medicine

Key Expected 2022 Milestones



FPI – First Patient In, ODD – Orphan Drug Designation

Contact:
info@kiorapharma.com

KIORA PHARMACEUTICALS