UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549
FORM 8-K

CURRENT REPORT

Pursuant to Section 13 OR 15(d) of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): January 25, 2023

Ocuphire Pharma, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**001-34079**	**11-3516358**
(State or other jurisdiction of incorporation)	(Commission File Number)	(IRS Employer Identification No.)

37000 Grand River Avenue, Suite 120 Farmington Hills, MI	**48335**
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code: **(248) 681-9815**

N/A

(Former name or former address, if changed since last report.)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, $0.0001 par value	OCUP	Nasdaq Capital Market

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.12b-2 of this chapter).
Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Item 7.01 Regulation FD Disclosure.

On January 25, 2023, Ocuphire Pharma, Inc. (the "Company") posted on its website an updated corporate presentation including the results of its ZETA-1 Phase 2b Trial in diabetic retinopathy. A copy of the presentation is furnished as Exhibit 99.1 to this Current Report on Form 8-K and is incorporated by reference herein.

The information in this Item 7.01, including Exhibit 99.1 attached hereto, is being furnished, shall not be deemed "filed" for any purpose, and shall not be deemed incorporated by reference in any filing under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, except as expressly set forth by specific reference in such a filing.

Item 8.01 Other Events.

On January 25, 2023, the Company issued a press release regarding the results of its ZETA-1 Phase 2b Trial in diabetic retinopathy. A copy of the press release is filed as Exhibit 99.2 to this Current Report on Form 8-K and incorporated herein by reference.

Information contained on or accessible through any website reference in the press release is not part of, or incorporated by reference in, this Current Report on Form 8-K, and the inclusion of such website addresses in this Current Report on Form 8-K by incorporation by reference of the press release is as inactive textual references only.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

Exhibit Number	Exhibit Description
99.1	Investor Presentation Materials, dated January 25, 2023
99.2	Press Release, dated January 25, 2023
104	Cover Page Interactive Data File (embedded within Inline XBRL document).

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

OCUPHIRE PHARMA, INC.

By: /s/ Mina Sooch
Mina Sooch
Chief Executive Officer

Date: January 25, 2023

Exhibit 99.1

Ocuphire PHARMA

Restore Vision & Clarity

January 25, 2023

ZETA-1 APX3330 Topline Results

Investor Webcast

Disclosures and Forward-Looking Statements

This presentation contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Such statements include, but are not limited to, statements concerning the success and timing of planned future clinical trials for APX3330, timing and occurrence of an end of phase 2 meeting with the FDA, the potential of a Phase 3 registration path for APX3330, the success and timing of planned regulatory filings, business strategy, cash runway, scalability, the potential for APX3330 to be the first line of therapy for DR patients, and the potential market opportunity for the slowing of DR progression. These forward-looking statements are based upon the Company's current expectations and involve assumptions that may never materialize or may prove to be incorrect. Actual results and the timing of events could differ materially from those anticipated in such forward-looking statements as a result of various risks and uncertainties, including, without limitation: (i) the success, costs, and timing of regulatory submissions and pre-clinical and clinical trials, including enrollment and data readouts; (ii) regulatory requirements or developments; (iii) changes to clinical trial designs and regulatory pathways; (iv) changes in capital resource requirements; (v) risks related to the inability of Ocuphire to obtain sufficient additional capital to continue to advance its product candidates and its preclinical programs; (vi) legislative, regulatory, political and economic developments, (vii) Nyxol partnership may not facilitate the commercialization or market acceptance of Ocuphire's product candidates; (x) the success and timing of commercialization of any of Ocuphire's product candidates, including the scalability of Ocuphire's product candidates and (xi) the maintenance of Ocuphire's intellectual property rights. The foregoing review of important factors that could cause actual events to differ from expectations should not be construed as exhaustive and should be read in conjunction with statements that are included herein and elsewhere, including the risk factors detailed in documents that have been and may be filed by the Company from time to time with the SEC. All forward-looking statements contained in this presentation speak only as of the date on which they were made. The Company undertakes no obligation to update such statements to reflect events that occur or circumstances that exist after the date on which they were made.

The Company makes no representation or warranty, express or implied, as to the accuracy or completeness of the information contained in or incorporated by reference into this presentation. Nothing contained in or incorporated by reference into this presentation is, or shall be relied upon as, a promise or representation by the Company as to the past or future. The Company assumes no responsibility for the accuracy or completeness of any such information. This presentation also contains estimates and other statistical data made by independent parties and by us relating to market shares and other data about our industry. This data involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. The trademarks included herein are the property of the owners thereof and are used for reference purposes only. Such use should not be construed as an endorsement of such products.

Agenda and Speakers

Topic
ZETA-1 Key Takeaways and APX3330 Oral MOA
ZETA-1 Trial Design and Demographics
ZETA-1 Efficacy Findings
ZETA-1 Safety Findings
Overall Summary and Next Steps
Q&A

Mina Sooch, MBA
Founder and Chief Executive Officer

Mitch Brigell, PhD
Head of Clinical Development and Strategy

Charles Wykoff, MD, PhD
Vitreoretinal Specialist

Mark Kelley, PhD
APX Scientific Founder and Medical Advisor

ZETA-1 Key Takeaways and APX3330 Oral MOA

ZETA-1 Trial: Key Takeaways

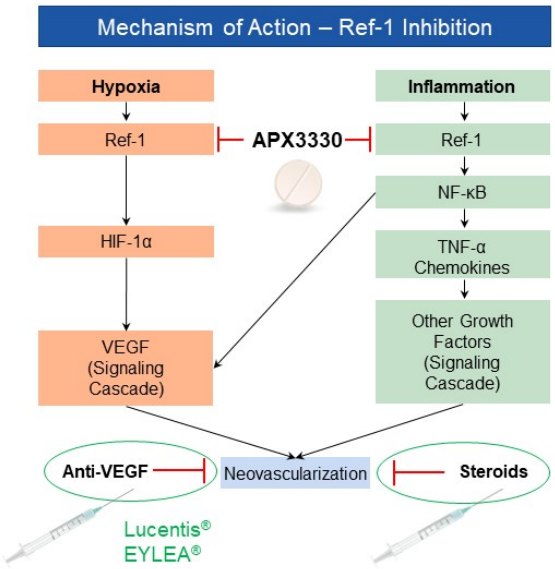
- APX3330 achieved statistical significance on a key pre-specified secondary endpoint of preventing clinically meaningful progression of diabetic retinopathy (as defined by binocular 3 or more steps worsening on the DRSS[1]) after 24 weeks of treatment
  - Trend toward more efficacy at 24 weeks vs 12 weeks, suggests that the 52-week Phase 3 trial may generate a larger signal due to an increase in % of placebo subjects who progress
- Prevention of 3-step worsening (binocular) is a suitable endpoint for an oral, systemically drug ➔ Ocuphire plans to go forward with this potential registration endpoint in Phase 3 following confirmation with the FDA in EOP2 meeting
- Oral APX3330 demonstrated favorable safety and tolerability
- Retinal KOLs feedback suggest that slowing of DR progression with an oral agent would be a useful treatment in patients with background DR and good visual function
- If approved, APX3330 could be an important new primary preventative therapeutic option that could be used in a large number of diabetic patients who are earlier in their disease

1. diabetic retinopathy severity score
Source: ZETA-1 Clinical Trial

Ocuphire PHARMA

APX3330 History and Ref-1 Inhibition Mechanism

Ref-1 Involved in Multiple Key Pathways that Contribute to Diabetic Retinopathy and DME



- Ref-1 (reduction-oxidation effector factor-1) is a novel target discovered by Dr. Mark R. Kelley at Indiana University School of Medicine and Ocuphire's Scientific Advisor for APX program
- APX3330 is a small molecule oral drug candidate and a first-in-class inhibitor of Ref-1
- APX3330 previously developed by Eisai for multiple hepatic inflammatory indications and later by Apexian for advanced solid tumors in **11 Phase 1 and 2 trials**
  - Similar oncology origin as approved anti-VEGFs
- **MOA uniquely decreases both abnormal angiogenesis and inflammation by blocking pathways downstream of Ref-1**
- Extensively studied in over **20 in-vitro and animal studies** with favorable efficacy and safety

Logsdon et al (2018), Li et al (2014).

ZETA-1 Trial Design and Demographics

DR/DME ZETA-1 Phase 2 Design

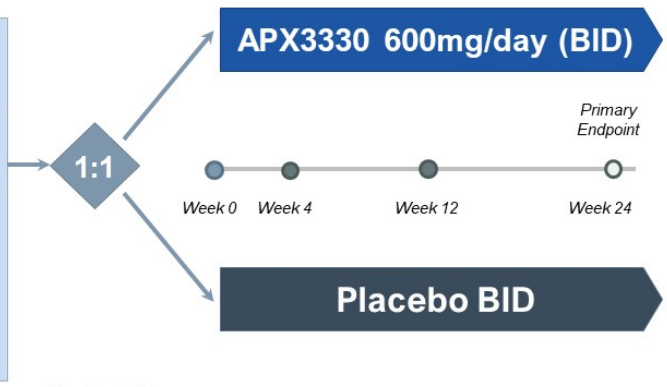
Randomized, Double-Masked, Placebo-Controlled 24-Week Trial (Similar To Eylea P3 DR Trial)

ZETA-1

25 US sites

90-100 participants with moderately severe-to-severe NPDR or mild PDR

Noncentral DME is permitted in study eye and central DME allowed in fellow eye



Eligibility Screening

Randomization

NPDR = non-proliferative diabetic retinopathy
PDR = proliferative diabetic retinopathy

103 Subjects Enrolled (FPFV Apr 2021- LPLV Aug 2022)
Top Line Announced in Early 2023

Endpoints

Primary: % subjects with ≥ 2 step improvement on DRSS (Diabetic Retinopathy Severity Scale) at wk 24

Secondary:
- DRSS worsening*
- DRSS improvement*
- Progression to vision threatening complications
- Central subfield thickness (CST)
- Best Corrected Distance Visual Acuity (BCDVA)
- Rescue subjects
- DME fellow eye status
- Safety and tolerability

Exploratory:
- Labs / PK

**Potential Phase 3 approvable endpoints*

NPDR = non-proliferative diabetic retinopathy; PDR = proliferative diabetic retinopathy
ZETA-1 Clinical Trial is Sponsored by Ocuphire Pharma

Ocuphire Pharma

Key Eligibility Criteria in ZETA-1

Oral Medication Provides Binocular Treatment; DME Allowed in Fellow Eye

Inclusion	Exclusion
• Males or non-pregnant females ≥ 18 years of age • At least one eye with DR **DRSS 47, 53, or 61, confirmed by a central reading center)** in which PRP and intravitreal injections of an anti-VEGF agent can be safely deferred for ≥ 6 months in the opinion of the Investigator • **BCVA assessed by ETDRS protocol letters score of ≥ 60 letters (Snellen equivalent 20/63 or better) in the study eye** • Body mass index (BMI) between 18 and 40 kg/m^2, inclusive	• Retinopathy from causes other than diabetes in study eye • Presence of **center involved diabetic macular edema (DME) defined as a central subfield thickness (CST) ≥ 320 µm on SD-OCT** – **Center involved DME in the fellow eye is allowed** • Prior treatment in study eye with focal/grid laser photocoagulation within the past year, PRP at any time, **systemic or intravitreal anti-VEGF agents within last 6 months in study eye** • Intraocular steroids including triamcinolone and dexamethasone implant within the last 6 months • Fluocinolone implant within the last 3 years • HbA1c ≥ 12.0% • Clinically significant systemic disease (e.g., uncontrolled diabetes, myasthenia gravis, cancer, hepatic, renal, endocrine, or cardio-vascular disorders) that might interfere as deemed by Investigator

Source: ZETA-1 Clinical trial

Ocuphire Pharma

ZETA-1: Demographics

Well-Balanced Across Arms

	APX3330 n=51	Placebo n=52	Total n=103
Demographics			
Age (years): Mean (Range)	54.3 (26-81)	58.3 (24-78)	56.3 (24-81)
Sex: Male n (%) **Female** n (%)	24 (47%) 27 (53%)	26 (50%) 26 (50%)	50 (49%) 53 (52%)
Race: White n (%) **African American** n (%) **Asian** n (%) **Other** n (%)	40 (78%) 5 (10%) 3 (6%) 3 (6%)	41 (79%) 6 (12%) 1 (2%) 0 (0%)	81 (79%) 11 (11%) 4 (4%) 3 (3%)
***Ethnicity: Hispanic or Latino** n (%)* ***Not Hispanic or Latino** n (%)*	28 (55%) 23 (45%)	23 (44%) 29 (56%)	51 (50%) 52 (51%)
Time (Years) Since Onset of Diabetes: Mean	15	16	16

Source: ZETA-1 Clinical Trial

ZETA-1: Baseline DRSS Scores Study and Fellow Eye

Well-Balanced Across Arms

	APX3330 n=51	Placebo n=52	Total n=103
DRSS Score – Study Eye			
DRSS Category (Screening) Study Eye [n (%)]			
47 (Moderately severe to severe NPDR)	22 (43%)	18 (35%)	40 (39%)
53 (Moderately severe to severe NPDR)	25 (49%)	28 (54%)	53 (52%)
61 (Mild proliferative diabetic retinopathy)	4 (8%)	6 (12%)	10 (10%)

	APX3330 n=45	Placebo n=49	Total n=94
DRSS Score – Fellow Eye			
DRSS Category (Screening) Fellow Eye [n (%)]			
43 or Lower (Mild to moderate NDPR or better)	**14 (31%)**	**12 (24%)**	**26 (28%)**
47 (Moderately severe to severe NPDR)	13 (29%)	19 (39%)	32 (34%)
53 (Moderately severe to severe NPDR)	12 (27%)	9 (19%)	21 (22%)
61 (Mild proliferative diabetic retinopathy)	1 (2%)	4 (8%)	5 (5%)
65 or Higher (Moderate to severe prolif. DR)	**5 (11%)**	**5 (10%)**	**10 (11%)**

Source: ZETA-1 Clinical Trial

Ocuphire Pharma

ZETA-1: Baseline Characteristics Study and Fellow Eye

Well-Balanced Across Arms

	APX3330 n=51	Placebo n=52	Total n=103
Baseline Characteristic			
BCVA letters in Study Eye Letters Read (mean)	**81**	**78**	**80 (20/25 Snellen)**
BCVA letters in Fellow Eye *Letters Read (mean)*	76	77	77 *(20/32 Snellen)*
OCT Central Subfield Thickness in Study Eye (µm)	**270**	**271**	**271**
OCT Central Subfield Thickness in Fellow Eye (µm)	292	286	289
Intraocular Pressure in Study Eye (mmHg)	15	16	15
Systolic Blood Pressure (mmHg) (mean)	136	139	138
Diastolic Blood Pressure (mmHg) (mean)	82	80	81
Heart Rate (beats/min) (mean)	78	76	77
Hemoglobin A1C (%) (mean)	8.4	8.3	8.3
Body Mass Index (kg/m^2) (mean)	31	31	31

Good Visual Acuity

Fluid Below DME Definition of 320 micron (µm)

Note: Blood markers are normal range as baselines

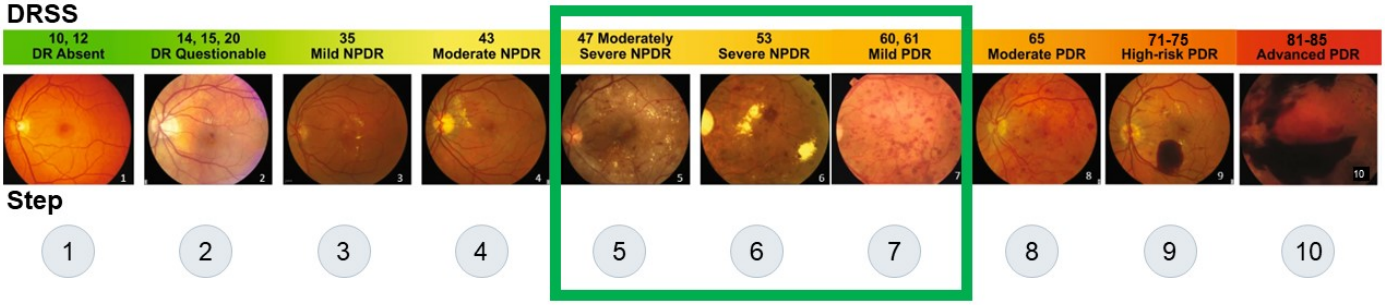
Source: ZETA-1 Clinical Trial

Ocuphire Pharma

ZETA-1 Efficacy Findings

Background on DRSS Assessment & Binocular DRSS

Diabetic Retinopathy Severity Scale (DRSS)



Monocular calculation: Change in DRSS Step in a Single Eye (Study Eye or Fellow Eye)

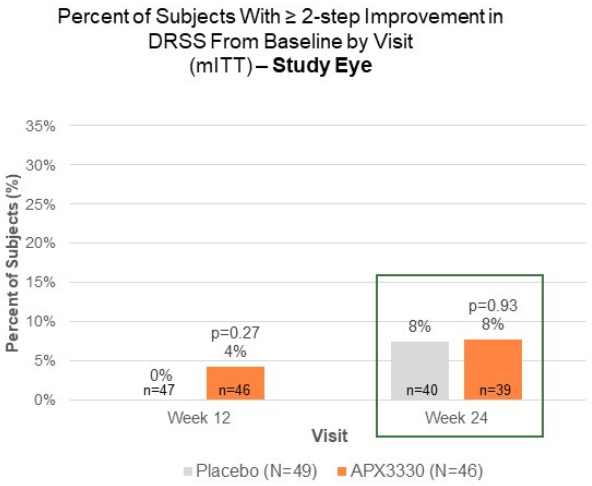
Binocular calculation: Composite Change in DRSS Step in Study Eye and Change in DRSS Step in Fellow Eye

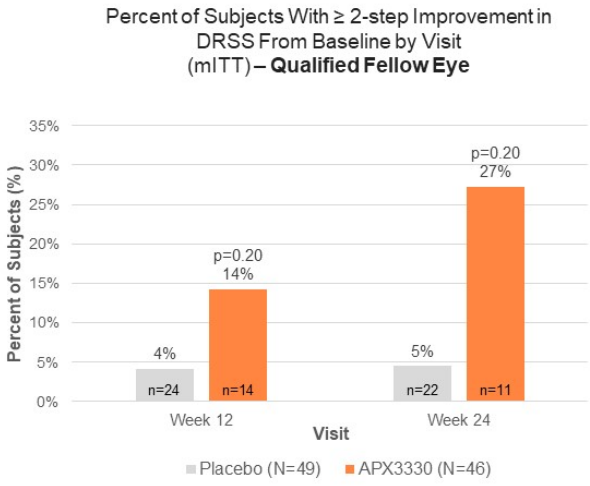
The ETDRS diabetic retinopathy severity scale (DRSS) is a categorical tool for clinical trials that contains 10 discreet steps from no retinopathy to severe proliferative retinopathy derived from the grading of fundus photographs for each eye at a central reading center. Each patients' study eye had a baseline DRSS step of 5, 6 or 7 to be included in this trial.

Ocuphire

Percent of Subjects With ≥ 2-Step Improvement in DRSS From Baseline

ZETA-1 Did Not Meet the Week 24 Phase 2 Primary Endpoint (based on Anti-VEGF Precedence for DR)





Source: ZETA-1 Clinical Trial
Note: Large "N" indicates total number of participants within each arm for the mITT population. Small "n" indicates total number of evaluable eyes for each respective endpoint and arm.
Note: Images from Central Reading Center will be reviewed prior to EOP2 FDA meeting

Clinically Meaningful Registration Endpoints in DR

Path Forward to Phase 3: Systemic Drugs Should Evaluate DRSS Change in Both Eyes

In retina, opportunity for approval to show **improvement OR worsening (prevention of progression)***

Precedent approvable endpoint for locally delivered drugs (non-systemic) in DR:

- ≥ 2-step DRSS improvement in study eye
  - Eylea (Panorama trial)
  - Lucentis (Rise/Ride trials)

Oral/systemic drugs are different than anti-VEFG IVT as they treat both eyes

Therefore, a suitable evaluation is change in both eyes (binocular)

Potential approvable endpoints for systemic drug in DR (to be confirmed at the EOP2 FDA meeting) include:

- ≥ 3-step binocular DRSS improvement
- **≥ 3-step binocular DRSS worsening**

ZETA-1 Phase 2 trial for APX3330 evaluated key secondary endpoints ≥ 3-step binocular DRSS improvement and worsening to inform design of the Phase 3 registration trial

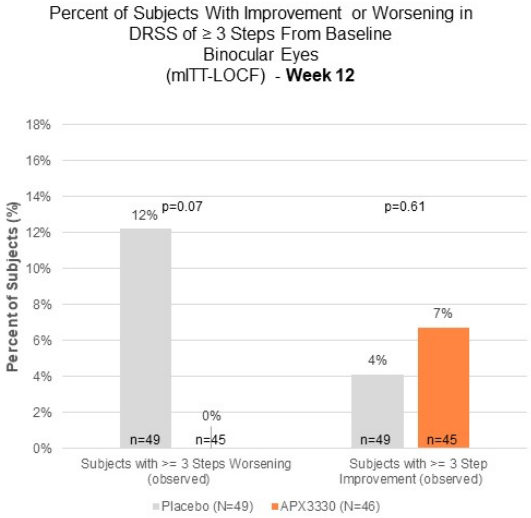
*Nair P, Aiello LP, Gardner TW, Jampol LM, Ferris FL III. Report From the NEI/FDA Diabetic Retinopathy Clinical Trial Design and Endpoints Workshop. Invest Ophthalmol Vis Sci. 2016 Oct 1;57(13):5127-5142. doi: 10.1167/iovs.16-20356. PMID: 27699406; PMCID: PMC6016432.

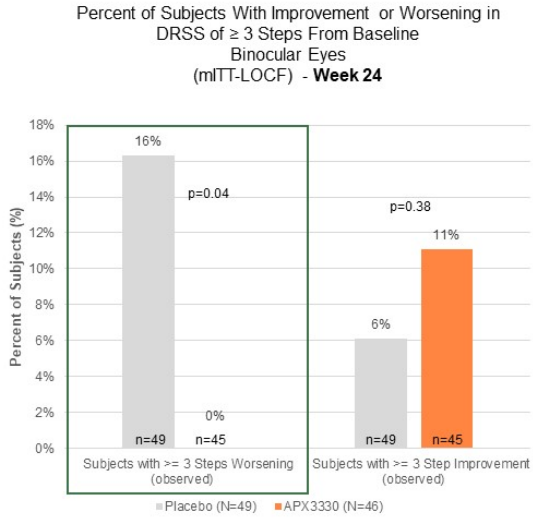
Source: ZETA-1 Clinical trial

Ocuphire Pharma

Percent of Subjects With Improv. or Worsening in Binocular DRSS of ≥ 3-Steps

Potential Phase 3 Endpoints as an Oral Drug; Results Improve with Time





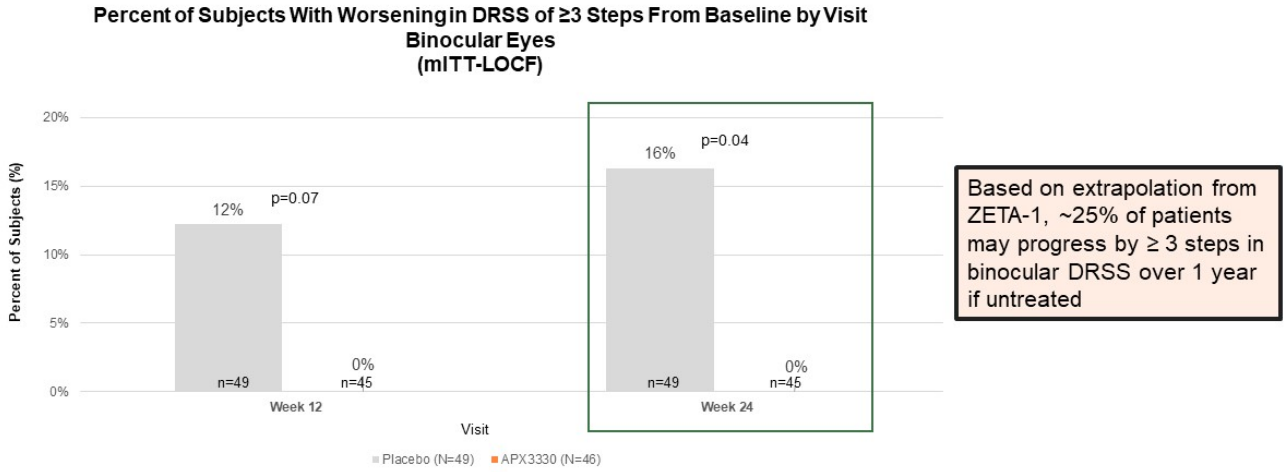
Source: ZETA-1 Clinical Trial

Note: Large "N" indicates total number of participants within each arm for the mITT-LOCF population. Small "n" indicates total number of evaluable eyes for each respective endpoint and arm.

Note: Images from Central Reading Center will be reviewed prior to EOP2 FDA meeting

Percent of Subjects With Binocular Worsening in DRSS of ≥ 3-Step

Selected Primary Registration Endpoint for Phase 3, To Be Formally Confirmed at EOP2 FDA Meeting

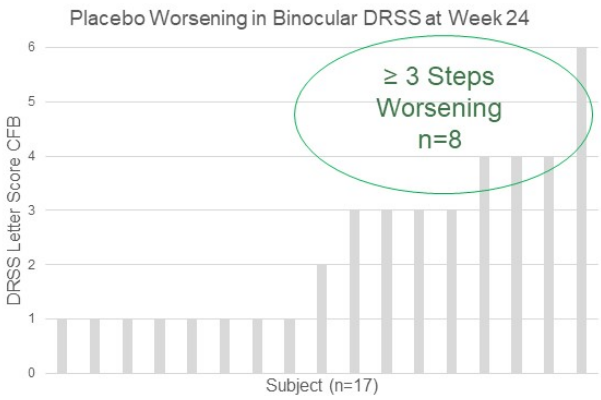


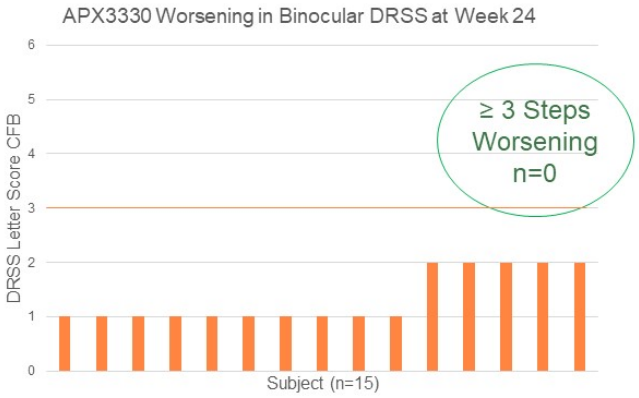
Based on extrapolation from ZETA-1, ~25% of patients may progress by ≥ 3 steps in binocular DRSS over 1 year if untreated

Source: ZETA-1 Clinical Trial
Note: Images from Central Reading Center will be reviewed prior to EOP2 FDA meeting
Note: Large "N" indicates total number of participants within each arm for the mITT-LOCF population. Small "n" indicates total number of evaluable eyes for each respective endpoint and arm

Waterfall by Subject Binocular Change in DRSS at Week 24

8 Subjects in Placebo and 0 in APX3330 had a 3-Step DRSS Worsening at Week 24





Waterfall plots show subjects with worsening

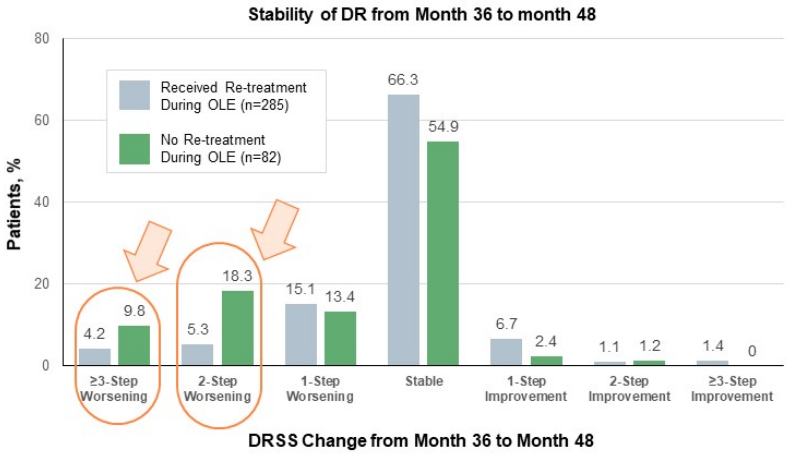
Source: ZETA-1 Clinical Trial
Note: Images from Central Reading Center will be reviewed prior to EOP2 FDA meeting

Ocuphire Pharma

Historic Data for Diabetic Patients on DR Progression

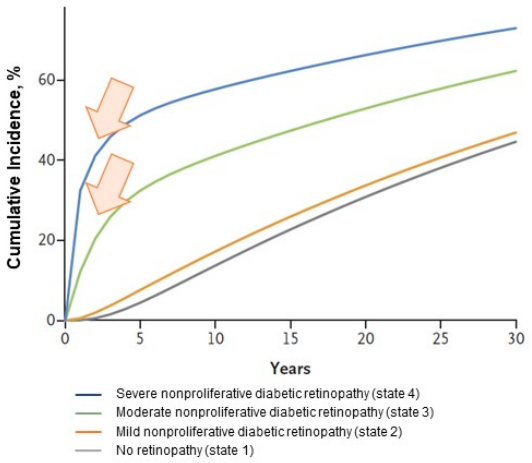
The Worse the DRSS, the Higher the Risk of Vision Threatening Complications

Lucentis data shows that 28% untreated eyes will worsen DRSS by ≥ 2-steps over 1 year



Source – Sun JK, Evidence for Diabetic Retinopathy Progression and Regression from Clinical Trials. Presented at NDI/FDA DR Clinical Trials Design and Endpoints Workshop, June 26, 2015.

Probability of developing PDR or DME is greater with higher baseline NPDR severity



Source - Frequency of Evidence-Based Screening for Retinopathy in Type 1 Diabetes. N Engl J Med. 2017 Apr 20;376(16):1507-1516. doi: 10.1056/NEJMoa1612836. PMID: 28423305; PMCID: PMC5557280

Ocuphire Pharma

ZETA-1 Safety Findings

PK/Safety Data Findings

Favorable Safety Data for Oral APX3330

- APX3330 PK/serum levels as predicted at 600 mg/day
  - Serum levels of APX3330 are consistent with previous findings in hepatitis and oncology trials
- Fewer subjects lost 5 or more letters at week 24 with APX3330 compared to placebo
- Limited treatment related AEs (mostly mild and transient)
  - Only rash (6% APX3330 vs 2% placebo) and pruritus (12% APX3330 vs 2% placebo) were seen more frequently in APX3330 than placebo
- No treatment related serious TEAES
- No effect on vital signs (BP, HR)
- No effect on physical exam
- No change in liver, kidney, or heart functions
- No effect on IOP
- No effect on clinical labs

Treatment Emergent Adverse Events

APX3330 Safety Similar To or Better Than Placebo

103
Subjects Enrolled

91
Subjects completed thru week 24

211 Treatment Emergent AEs (64 Subjects)
91 (29 Subjects) APX3330, 120 (35 Subjects) Placebo

31
Treatment-Related AEs (in 21 Subjects)

APX3330
14 AEs in 10 subjects
(10 mild, 4 moderate, 0 severe)

Placebo
17 AEs in 11 subjects
(8 mild, 9 moderate, 0 severe)

4	5	3
withdrew due to an AE	lost to follow-up	withdrew consent or site closure
2 APX, 2 PBO	2 APX, 3 PBO	2 APX, 1 PBO

0
Treatment-Related AEs involving liver, heart, kidney, brain, lung, or vital signs

14 SAEs (in 11 Subjects)

3 unrelated SAEs in APX3330

11 unrelated SAEs in Placebo

Oral APX3330 safety profile consistent with that seen in prior trials

 ZETA-1 Clinical Trial Safety Population (subject to final review)

Ocuphire Pharma

Summary and Next Steps

APX3330 Product Candidate Profile for Multiple Retinal Indications

Oral, First-In-Class Ref-1 Inhibitor with Favorable Human Safety Data from 12 Completed Trials

APX3330: Well-tolerated Oral Dose up to 600 mg/day | Twice Daily Dosing

MOA and Efficacy Signals in DR

Novel MOA for Treating Retina
- ↓ Inflammation
- ↓ Abnormal Angiogenesis
- Daily vs. episodic exposure

Good Patient Compliance in ZETA-1 with Convenient Oral Dosing

APX3330 Demonstrated Slowing of Progression of Diabetic Retinopathy

Favorable Safety Profile

Over 350 Subjects (Healthy, Liver, Cancer, Diabetic) Treated
Notably, Several Subjects Dosed ~1 Yr and Others 24-Wks

Few Systemic AEs Across All Doses (120mg-720mg)
- **< 5% Mild Skin Rash (reversible)**
- **< 5% Mild Diarrhea**

No Treatment-Related Organ Toxicity
(Liver, Cardiovascular {BP, HR}, Kidney, Neurologic, Pulmonary)

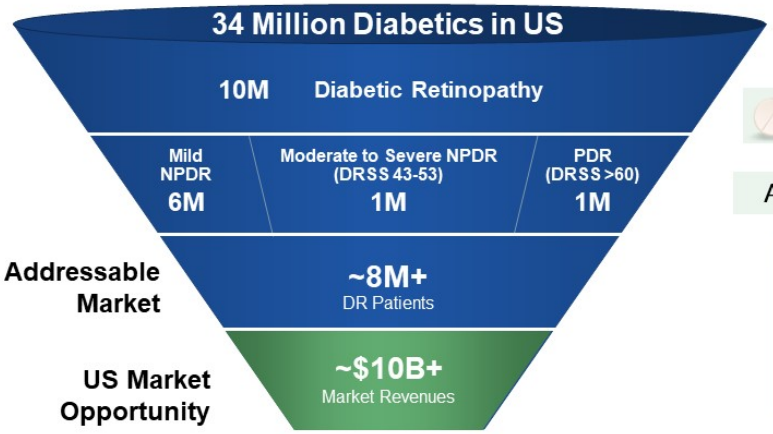
Minimal Ocular Side Effects*

Source: ZETA-1 Clinical Trial; *1 subject had vision blur thought to be related by investigator in ZETA-1

Ocuphire Pharma

Broad Opportunities to Treat Retinal Diseases with APX Platform

APX3330 May Treat Patients Across Retinal Diseases as Single Agent or Adjunctive Therapy



APX3330

APX3330 + Anti-VEGF treatments

APX2009 / APX2014 / APX3330 ***(Local Delivery)***

Inflammatory component is common across these retina indications as well & potentially addressable by MOA of Ref-1

DME 1M	Wet AMD 2M	Dry AMD 10M+	GA 1M

Potential First Oral Rx for Retina Diseases with Multi-Billion Revenue Opportunity

Source:
1. American Diabetes Association; International Diabetes Federation; Healthline; *Ocuphire internal analysis and assumptions;
2. Das UN. DME, retinopathy and age-related macular degeneration as inflammatory conditions. Arch Med Sci. 2016;12(5):1142-1157. doi:10.5114/aoms.2016.61918
3. Patient survey adapted from Lions International Foundation and International Diabetes Foundation-Europe; Meltzer 2000
4. Estimates are provided by the National Eye Institute, FactSheet, Global Data, and Research and Markets. Estimated values are rounded.
5. Estimated prevalence in the U.S.; DME- Diabetic Macular Edema; Age-related Macular Degeneration; Geographic Atrophy; Retinal Vein Occlusion

Ocuphire Pharma

Landscape of Systemic Therapies for Diabetic Retinopathy

Ocuphire's APX3330 is the Most Advanced Oral Drug Moving into EOP2 Mtg and Phase 3

Company	Drug	Target/MOA	Indication	Route of Administration	Phase 1	Phase 2	Phase 3	Primary Endpoint/ Secondary Endpoints
Lilly	LY333531	Protein Kinase C inhibitor	DR	Oral	✓	✓	× 2006	2002: BCVA 3-line
aerpio pharmaceuticals	çAKB-9778	Tie2	DR	Subcutaneous	✓	× 2019		2017: 2-step DRSS @wk24
Ocuphire Pharma	APX3330	Ref-1 inhibitor (Anti-VEGF and Anti-inflammatory)	DR	Oral	✓	✓		2020: 2-step DRSS @wk24
BAYER	BAY1101042	Guanylate Cyclase activator	DR	Oral	✓	○		2021: 2-step DRSS @wk24
ALKAHEST	AKST4290	CCR3 Eotaxin inhibitor	DR	Oral	✓	× 2022		2021: 2-step DRSS @wk24
Roche	RG7774	CB2 receptor (cannabinoid)	DR	Oral	✓	○		2020: 2-step DRSS @wk36
Boehringer Ingelheim	BI 1467335	AOC3	DR	Oral	✓	× 2021		2017: Primary:safety@wk12 Secondary: 2-step DRSS@wk12
Valo	OPL-0401	ROCK 1/2 inhibitor	DR	Oral	✓	○		2021: 2-step DRSS @wk24

Note Two Tyrosine Kinase and a Plasma Kallikrein Inhibitors failed as orals in Phase 2 due to dose limiting adverse events (e.g., liver and cardiovascular)

✓ *Completed* ○ *Ongoing* × *Discontinued*

www.clinicaltrials.gov

Ocuphire Pharma

APX3330 has Potential to be Early Preventative Therapy for DR Patients

Efficacy Signal

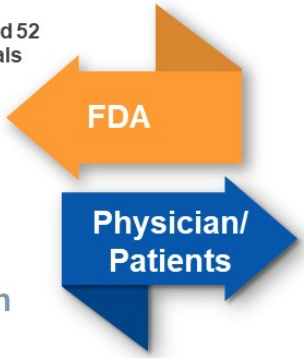
- **Intravitreal:** Percent of patients with ≥ 2 step improvement on the DRSS score at week 24 and 52 compared to placebo in 2 well-controlled trials
- **Systemic: Percent of patients with ≥ 3-step worsening on binocular DRSS at week 24 and 52 compared to placebo in 2 well-controlled trials**

Safety

- Approval depends on a product's benefit outweighing its risks in the intended population, this benefit should be evaluated in multi-center, 2-year clinical trials

Non-Invasive Treatment Option

- FDA does not require comparative arm of approved anti-VEGF injections (Eylea) for DR



Efficacy Signal

- Clinically meaningful decrease in diabetic retinopathy severity

OR

- Early intervention with oral may prevent progression of DR to vision loss

Safety

- No major organ toxicities
- Well-tolerated (e.g., AEs acceptable if mild and infrequent for oral)

Non-Invasive Treatment Option

- Eylea®, although approved, is currently not used as standard of care because of the treatment burden for asymptomatic DR patients
- Ability to be **prescribed by wide-range of healthcare providers (ophthalmologists, optometrists, endocrinologists, primary care, etc.)**
- Oral option increases global access, especially in underserved regions

Eylea® label; APX3330 Investigator Brochure, ZETA-1 clinical trial

Ocuphire PHARMA

Key Takeaways and Next Steps

Key Takeaways

- APX3330 is the most advanced oral program in development for diabetic eye disease
- APX3330 demonstrated favorable safety with compelling potential to slow progression of diabetic retinopathy
- ZETA-1 statistically significant results on 'binocular 3-step worsening DRSS' endpoint provides a potential Phase 3 registration endpoint

Next Steps

- Further analysis of ZETA-1 Phase 2 data, including insights for Phase 3 registration trial design
- Plan for the EOP2 FDA meeting for APX3330 in DR indication
- Data presentations at medical meetings
- Advance APX3330 development (cGMP drug, NDA-enabling work, first Phase 3 trial, regional partnerships) → fully funded into 2025

Goal To have a clinically meaningful impact on ***preventing progression*** to reduce likelihood of vision loss in diabetic retinopathy patients

Ocuphire Pharma

Ocuphire Pharma

Nasdaq: OCUP

Upcoming Catalysts:

- ✓ *Topline Results APX3330 ZETA-1 P2b trial for DR/DME (Early 2023)*
- *EOP2 FDA Meeting for APX3330 (2H 2023)*
- *Pivotal Phase 3 Trials for Nyxol in Presbyopia with 1st Data Readouts (Late 2023)*
- *Potential Approval of 1st Nyxol NDA (Late 2023)*

Stock Price[1]	$3.67
Market Cap[1]	$77M
Cash (Pro-Forma)[2,3]	~$49 M
Shares Outstanding[2]	20.8M
Average Daily Volume	~200k Shares
Cash Runway Into 2025	

[1] As of close on January 24, 2023; [2] End of 3Q22 (10-Q); [3] Includes upfront payment from License Agreement

Corporate Highlights

Two Lead Clinical-Stage Novel Drugs Addressing Multiple Large Ophthalmology Markets (~$20B US total) with Limited to No Competition & Patent Coverage to 2034+

APX3330 oral tablets
Diabetic Retinopathy/Diabetic Macular Edema (DR/DME) – diabetic eye disease

Nyxol preservative-free eyedrops
Reversal of Mydriasis (RM) – eye dilation
Presbyopia (P) – age-related blurry near vision
Night Vision Disturbances (NVD) – halos, glares, starbursts

Successful Execution of 5 Trials in Last 2 Years with 6 Positive Phase 3 & Phase 2 Data Read-outs for Nyxol in RM, Presbyopia, and NVD

NDA submitted Nov 2022 for Nyxol's first indication in RM

Global License Agreement Signed in Late 2022 with Viatris to Develop and Commercialize Nyxol for All Indications in the US and Globally

Strong Financial Position (with No Debt) to Support Operations into 2025 and Coverage from 5 Biotech Research Analysts

Ocuphire PHARMA


Ocuphire
PHARMA
Restore Vision & Clarity
www.ocuphire.com
ir@ocuphire.com
Ocuphire Pharma
Thank You and Q&A

Exhibit 99.2

Ocuphire Announces Topline Results from ZETA-1 Phase 2 Trial of Oral APX3330 in Diabetic Retinopathy and Plans for End-of-Phase 2 Meeting with FDA

Oral APX3330 Achieved Statistical Significance on a Key Pre-specified Secondary Endpoint of Preventing Clinically Meaningful Progression of Diabetic Retinopathy (DR) after 24 Weeks of Treatment

Oral APX3330 Demonstrated Favorable Safety and Tolerability Allowing for a Potential Attractive Non-Invasive Option for Protection of Vision in Both Eyes in DR Patients

Conference Call and Webcast Today at 4:30pm ET

FARMINGTON HILLS, Mich., January 25, 2023 - Ocuphire Pharma, Inc. (Nasdaq: OCUP), a clinical-stage ophthalmic biopharmaceutical company focused on developing and commercializing therapies for the treatment of refractive and retinal eye disorders, today announced topline efficacy and safety results from its ZETA-1 Phase 2 trial evaluating oral APX3330 for the treatment of diabetic retinopathy (DR).

"Our goals in this initial retina Phase 2 trial were to explore multiple endpoints to evaluate the potential for APX3330 as the first oral drug to safely benefit diabetic patients with eye disease," said Mina Sooch, MBA, founder and CEO of Ocuphire Pharma. "Although we did not meet the primary endpoint (a precedented endpoint for local administration of anti-VEGF intravitreal injections), we are pleased that the ZETA-1 results on key pre-specified endpoints demonstrated positive outcomes with a favorable systemic and ocular safety profile that support our plans to move forward to an End-of-Phase 2 meeting with the FDA. Given the systemic delivery of APX3330, it is important to evaluate its effect on both eyes. APX3330 achieved statistical significance on a key pre-specified secondary endpoint – binocular 3-step or more worsening of DRSS (diabetic retinopathy severity score) – a clinically meaningful outcome that demonstrates the ability to slow the worsening of this progressive disease and is a potential Phase 3 registration endpoint. With the financial strength provided by our recent global Nyxol® license agreement, we have considerable flexibility to design and initiate the pivotal stage of the APX3330 program. We thank the study participants, clinical investigators and their site staffs for participating in the trial."

Peter K. Kaiser, MD, Professor of Ophthalmology at the Cole Eye Institute of the Cleveland Clinic Foundation commented, “The diabetes epidemic, and the associated increase in the number DR patients, has become a major burden on the healthcare system. Diabetic patients with non-proliferative retinopathy currently have limited treatment options to prevent progression of retinopathy and loss of vision. The current treatment paradigm is for physicians to wait and monitor early-stage DR patients, with anti-VEGF or steroid injectable therapy or laser treatment reserved for patients who advance to proliferative DR or DME. I am very encouraged by the data from ZETA-1 showing that APX3330 can potentially slow disease progression. In diabetic patients, APX3330 has demonstrated a favorable safety profile and has the advantage of being an oral agent treating both eyes at once. If these results are confirmed in Phase 3 and APX3330 is subsequently approved, healthcare providers would have an important new primary preventative therapeutic option that could be used in a large number of patients who are earlier in the course of disease. This would potentially reduce the number of patients who experience devastating vision loss.”

Summary of ZETA-1 Phase 2 Topline Data

ZETA-1 was a randomized, double-masked, placebo-controlled Phase 2 trial designed to evaluate the efficacy and safety of APX3330 in diabetic retinopathy patients. ZETA-1 was conducted at 25 U.S. sites and enrolled 103 patients with at least one eye meeting criteria for moderately severe to severe non-proliferative DR (NPDR) or mild proliferative diabetic retinopathy (mild PDR). The ETDRS diabetic retinopathy severity scale (DRSS) is a categorical tool for clinical trials that contains 10 discreet steps, from no retinopathy to severe proliferative retinopathy, derived from the grading of fundus photographs for each eye at a central reading center. Each patient’s study eye had a baseline DRSS step of 5, 6 or 7. The patients were randomized to receive 600 mg APX3330 or placebo daily (BID) over 24 weeks. Primary and secondary endpoints evaluated +/- 1, 2, 3, and 4 step improvement and worsening in DRSS at week 12 and week 24, change in best-corrected visual acuity (BCVA), change in central subfield thickness (CST) and safety and tolerability. Patient demographics and baseline characteristics were well-balanced across both treatment groups.

In the ZETA-1 Phase 2 trial, APX3330 did not meet the primary endpoint (% of patients with a≥ 2-step improvement in DRSS at week 24 in the study eye). Given the oral systemic delivery of APX3330, however, it is important to evaluate the effect on both eyes. A potential Phase 3 registration primary endpoint is a ≥ 3-step worsening of DRSS as a composite of both eyes (binocular). This secondary endpoint was pre-specified and evaluated in the ZETA-1 trial. APX3330 demonstrated statistically significant reduction of disease progression at 24 weeks: No (0%) APX3330-treated patients had a binocular ≥ 3-step worsening of DRSS from baseline compared with 16% for placebo-treated patients (p=0.04). This endpoint is the planned Phase 3 primary endpoint for future registration trials that will be confirmed at the EOP2 meeting with the FDA.

Additional efficacy endpoints were directionally favorable to support the effect of APX3330 in slowing the progression of DR and preserving vision. Visual acuity was stable with APX3330 and a trend was seen with fewer APX3330 treated patients losing 5 or more letters of distance vision compared to placebo patients (6% vs 19%, p=0.07). APX3330 showed a favorable safety and tolerability profile. Treatment-related adverse events were uncommon, and most were mild in severity. There were no treatment-related serious adverse events. No changes were observed in liver, kidney, or heart function as well as complete blood count and comprehensive metabolic panel.

Further analysis of the trial data is ongoing and detailed results will be presented at multiple medical meetings and submitted for peer review publication in 2023, including Angiogenesis, Exudation and Degeneration, February 10-11, 2023, and The Macula Society Annual Meeting, February 15–18, 2023. For more information on the ZETA-1 trial, please visit www.clinicaltrials.gov (NCT04692688).

About Diabetic Retinopathy and Disease Progression

Diabetes is the leading cause of blindness among adults age 20 to 74. DR is the most common diabetic complication that affects the eyes and is manifested when chronically elevated blood sugar levels cause damage to blood vessels in the retina. DR affects over 8 million patients in the U.S. and 93 million patients worldwide. This problem is expected to worsen as the number of individuals at risk of developing diabetes is projected to increase by 55% by 2035. In countries such as India and China, where the prevalence of diabetes and diabetic eye is high and access to retina specialists is challenging, an oral treatment option would be ideal.

The increasing prevalence of diabetes globally and the concomitant increase in vision loss as a consequence of DR have increased the need for early intervention to protect the retina from the damaging effects of diabetes and reduce the likelihood of vision loss. The ETDRS diabetic retinopathy severity score (DRSS) is an accepted surrogate for assessing the severity of DR because it is well established that progression on this 10-point scale correlates with the loss of vision due to proliferative DR and DME.[1,2] Although anti-VEGF biologics have been approved for the treatment of DR, they are generally not used for patients with background disease prior to loss of vision due to the need for frequent office visits for intravitreal injection. A safe and convenient oral treatment that slows or prevents worsening of DRSS would be a significant advance in treatment options in the quest to reduce the vision loss associated with diabetic eye disease.

About APX3330

APX3330 is a first-in-class, small molecule, oral inhibitor of the transcription factor regulator Ref-1 (reduction-oxidation effector factor-1). With a novel dual mechanism of action, APX3330 blocks the downstream pathways regulated by Ref-1 – including those involving angiogenesis (VEGF) and inflammation (NFkB) – to decrease abnormal activation of both angiogenesis, and of inflammatory pathways that are implicated across several ocular diseases, including DR, DME, and age-related macular degeneration (AMD). APX3330 has shown a favorable safety and tolerability profile in 12 clinical trials conducted in healthy, hepatitis, cancer, and diabetic subjects.

---

[1] Ip MS, Zhang J, Ehrlich JS. The Clinical Importance of Changes in Diabetic Retinopathy Severity Score. Ophthalmology. 2017 May;124(5):596-603. doi:10.1016/j.ophtha.2017.01.003. Epub 2017 Mar 8. PMID: 28284785.

[2] Fundus photographic risk factors for progression of diabetic retinopathy. ETDRS report number 12. Early Treatment Diabetic Retinopathy Study Research Group. Ophthalmology. 1991 May;98(5 Suppl):823-33. PMID: 2062515.

Conference Call and Webcast Details:
Date: January 25, 2023
Time: 4:30 PM ET
Dial-in information: 1-877-407-4018 (US); 1-201-689-8471 (International)
Passcode: 13736027
Webcast link

A link to the webcast can also be found on the "News and Media" section of Ocuphire's corporate website at https://www.ocuphire.com/news-media/events.

About Ocuphire Pharma

Ocuphire is a publicly traded (Nasdaq: OCUP), clinical-stage, ophthalmic biopharmaceutical company focused on developing and commercializing small-molecule therapies for the treatment of refractive and retinal eye disorders.

The Company has a previously disclosed partnership to develop and commercialize Nyxol® eye drops as a preservative-free eye drop formulation of phentolamine mesylate, a non-selective alpha-1 and alpha-2 adrenergic antagonist designed to reduce pupil size by uniquely blocking the alpha-1 receptors found only on the iris dilator muscle without affecting the ciliary muscle. Nyxol has been studied in a total of 12 clinical trials (3 Phase 1, 5 Phase 2, 4 Phase 3) across three indications, including single-use for reversal of pharmacologically-induced mydriasis (RM), and once-daily for treatment of presbyopia and dim light or night vision disturbances (NVD), pending regulatory approvals. Nyxol has submitted an NDA for the first indication RM under the 505(b)(2) pathway and is currently in Phase 3 for presbyopia and NVD.

The Company's late-stage product candidate APX3330 is an oral tablet designed to inhibit angiogenesis and inflammation pathways relevant to retinal and choroidal vascular diseases, such as diabetic retinopathy (DR) and diabetic macular edema (DME). APX3330 has been studied in 12 Phase 1 and 2 trials.

For more information, visit www.ocuphire.com

Forward Looking Statements

Statements contained in this press release regarding matters that are not historical facts are "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995. Such statements include, but are not limited to, statements concerning the success and timing of planned future clinical trials for APX3330, timing and occurrence of an End-of-Phase 2 meeting with the FDA, the potential of a Phase 3 registration path for APX3330, the success and timing of planned regulatory filings, business strategy, cash runway, scalability, the potential for APX3330 to be the first line of therapy for DR patients, and the potential market opportunity for the slowing of DR progression. These forward-looking statements are based upon Ocuphire's current expectations and involve assumptions that may never materialize or may prove to be incorrect. Actual results and the timing of events could differ materially from those anticipated in such forward-looking statements as a result of various risks and uncertainties, including, without limitation: (i) the success and timing of regulatory submissions and pre-clinical and clinical trials, including enrollment and data readouts; (ii) regulatory requirements or developments; (iii) changes to clinical trial designs and regulatory pathways; (iv) changes in capital resource requirements; (v) risks related to the inability of Ocuphire to obtain sufficient additional capital to continue to advance its product candidates and its preclinical programs; (vi) legislative, regulatory, political and economic developments, (vii) changes in market opportunities, (viii) the effects of COVID-19 on clinical programs and business operations, (ix) risks that the Nyxol partnership may not facilitate the commercialization or market acceptance of Ocuphire's product candidates; (x) the success and timing of commercialization of any of Ocuphire's product candidates and (xi) the maintenance of Ocuphire's intellectual property rights. The foregoing review of important factors that could cause actual events to differ from expectations should not be construed as exhaustive and should be read in conjunction with statements that are included herein and elsewhere, including the risk factors detailed in documents that have been and may be filed by Ocuphire from time to time with the SEC. All forward-looking statements contained in this press release speak only as of the date on which they were made. Ocuphire undertakes no obligation to update such statements to reflect events that occur or circumstances that exist after the date on which they were made.

Contacts

Corporate	Investor Relations	
Mina Sooch, MBA CEO & Founder ir@ocuphire.com	Corey Davis, Ph.D. LifeSci Advisors cdavis@lifesciadvisors.com	Bret Shapiro CoreIR brets@coreir.com