

November 23, 2021



Ocuphire Announces Enrollment of First Patients in Second Phase 3 Pivotal Trial (MIRA-3) for Nyxol® in Reversal of Mydriasis (RM)

RM Indication Allows for Rapid Recruitment with Top-line Results Expected in Early 2022

Nyxol has the Potential Opportunity to Address Estimated \$500M+ Reversal of Dilation Market with No Approved Therapies Today

FARMINGTON HILLS, Mich., Nov. 23, 2021 (GLOBE NEWSWIRE) -- 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 that the first subjects have been enrolled in the MIRA-3 Phase 3 pivotal trial evaluating Nyxol® Eye Drops in the reversal of pharmacologically-induced mydriasis (dilation of the pupil). With 6 sites enrolling subjects within days of activation and 10 more sites expected to start screening shortly, top-line results from the MIRA-3 trial are expected in early 2022 (around the end of the first quarter).

“The safety and efficacy of Nyxol for reversal of mydriasis have been demonstrated in our prior MIRA-1 Phase 2b and MIRA-2 Phase 3 clinical trials,” said Mina Sooch, President and CEO of Ocuphire Pharma. “Both of these trials successfully met their primary and multiple secondary endpoints with statistical significance. We know that over half of patients take 6 hours or longer, sometimes 24 hours, to return to their normal pre-dilated pupil size. Our prior data on Nyxol showed that 50% of patients returned to baseline by 90 minutes and 80% by 3 hours. A positive outcome in MIRA-3 comparable to the results achieved in MIRA-2 will position us to submit an NDA for Nyxol for reversal of mydriasis in late 2022. Successful completion of MIRA-3, as well as our planned smaller pediatric safety study, will bring the total number of patients treated with Nyxol to over 500, out of over 900 study subjects.”

David Boyer, M.D., Vitreoretinal Surgeon, Retina-Vitreous Associates Medical Group commented, “Providing the best care to my patients is my top priority. Therefore, I am eager to adopt treatments that enhance the patient experience. As a retinal specialist, there is simply no substitute for dilation when it comes to disease management and treatment, including chronic intravitreal injections for wet AMD or DME. With the ability to return many patients safely to baseline pupil diameter within an hour or two, Nyxol can provide substantial benefit. We dilate almost all of our patients, and I would be excited to offer Nyxol to my patients following dilation in order to optimize their care.”

MIRA-3 Trial Design for Nyxol

Nyxol is a proprietary, preservative-free, ophthalmic formulation of phentolamine mesylate designed to reduce pupil size by inhibiting or relaxing the iris dilator muscle. MIRA-3 is a multi-center, randomized, parallel-arm, double-masked, placebo-controlled study of the safety and efficacy of Nyxol (0.75% phentolamine ophthalmic solution) to reverse pharmacologically-induced mydriasis in healthy subjects. The MIRA-3 trial is designed to enroll approximately 330 subjects aged 12 and older. After screening, eligible subjects are randomized 2:1 to one of the 2 treatment arms (Nyxol or placebo, respectively) and will receive 1 of 3 approved mydriatic agents approximately 1 hour prior to receiving study treatment drops. Randomization will be 3:1:1 to a mydriatic agent (2.5% phenylephrine, 1% tropicamide, or Paremyd, respectively). The primary efficacy endpoint is the percentage of subjects' study eyes returning to ≤ 0.2 mm from baseline photopic pupil diameter at 90 minutes. Secondary endpoints include pupil diameter (at multiple time points from 30 minutes to 24 hours), accommodation, and a patient questionnaire, as well as new assessments of glare disability, glare tolerability, and pupillary response to light.

Ocuphire is collaborating closely on the Nyxol programs with a leading clinical research organization, Oculis Development Services (subsidiary of iuvo BioScience), which has been instrumental in the successful completion of the first two RM trials. Enrollment of these trials has been remarkably expeditious due to the straightforward trial design and the engagement of experienced optometry and ophthalmic practice sites. Together, there is a high degree of confidence to deliver top-line results in the first quarter of 2022 after just initiating in the middle of this quarter.

Edward Holland, M.D., Director of Cornea at Cincinnati Eye Institute and Professor of Ophthalmology at the University of Cincinnati said, "In current practice, to achieve an optimal examination of the retina, ophthalmologists and optometrists regularly dilate patients to perform monitoring and screening for diseases of the eye. Patients often complain after dilation, citing unwanted symptoms including photophobia, loss of accommodation, inability to read clearly, inability to return to work and subjective discomfort for hours. Other patients actually forgo dilation completely at annual visits, limiting our ability to perform a comprehensive exam. There are no currently approved treatments available, and it is exciting to see the steady advancement towards potential FDA approval for Nyxol. Nyxol is a drop that has demonstrated rapid reversal of dilation in dark and light irides. It can also be used to more quickly reverse the most commonly used mydriatic agents such as phenylephrine and tropicamide. Nyxol could be widely used in our clinical practices, which could increase dilated exams and promote better overall eye health in our patient population."

Reversal of Mydriasis Market Opportunity

Every year in the U.S., an estimated 100 million eyes are dilated to examine the back of the eye either for routine check-ups, disease monitoring or surgical procedures across all eye care practice groups. Depending on the individual and the color of their eyes, the pharmacologically-induced dilation can last anywhere from 6 to 24 hours. Dilated eyes have heightened sensitivity to light and an inability to focus on near objects, causing difficulty reading, working, and driving.

Market research conducted by GlobalData surveyed several hundred patients and eye care providers (optometrists and ophthalmologists) about Reversal of Mydriasis. Over 65% of surveyed patients reported moderate to severe negative impact of a dilated pupil. These

data underscore the potential value of the role of the investigational product candidate Nyxol in improving comfort and daily function after pupil dilation. Furthermore, approximately 80% of patients responded that they would be likely to request a dilation reversal drop, and more than 70% of eye care providers would be likely to use a reversal drop. The market research confirmed the patients' willingness to pay out-of-pocket to reverse their dilations with an attractive market size estimated at over \$500M. Ocuphire is currently evaluating partnering options for an efficient and effective commercial launch of Nyxol targeted for the second half of 2023.

About Ocuphire Pharma

Ocuphire is a publicly-traded (NASDAQ: OCUP), clinical-stage ophthalmic biopharmaceutical company focused on developing and commercializing therapies for the treatment of several eye disorders. Ocuphire's pipeline currently includes two small-molecule product candidates targeting front and back of the eye indications. The company's lead product candidate, Nyxol[®] (0.75% phentolamine ophthalmic solution) Eye Drops, is a once-daily preservative-free eye drop formulation of phentolamine mesylate, a non-selective alpha-1 and alpha-2 adrenergic antagonist designed to reduce pupil size, and is being developed for several indications, including reversal of pharmacologically-induced mydriasis (RM), presbyopia and dim light or night vision disturbances (NVD), and has been studied in 9 clinical trials including the recently completed Phase 3 trial in RM and Phase 2 trial in presbyopia. Ocuphire reported positive top-line data in March 2021 for MIRA-2, the first Phase 3 registration trial for treatment of RM, and recently initiated the second Phase 3 registration trial (MIRA-3). Ocuphire also reported positive top-line data in June 2021 for VEGA-1, a Phase 2 trial for the treatment of presbyopia. Nyxol is also currently in Phase 3 clinical development for NVD. Ocuphire's second 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) and has been studied in 11 Phase 1 and 2 trials. APX3330 is currently enrolling subjects in a Phase 2 clinical trial in subjects with DR/DME. As part of its strategy, Ocuphire will continue to explore opportunities to acquire additional ophthalmic assets and to seek strategic partners for late-stage development, regulatory preparation, and commercialization of drugs in key global markets. Please visit www.clinicaltrials.gov to learn more about Ocuphire's completed Phase 2 trials, recently completed Phase 3 registration trial in RM ([NCT04620213](https://clinicaltrials.gov/ct2/show/study/NCT04620213)), recently completed Phase 2 trial in presbyopia ([NCT04675151](https://clinicaltrials.gov/ct2/show/study/NCT04675151)), ongoing Phase 3 registration trial in NVD ([NCT04638660](https://clinicaltrials.gov/ct2/show/study/NCT04638660)), and Phase 2 trial in DR/DME ([NCT04692688](https://clinicaltrials.gov/ct2/show/study/NCT04692688)). 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 expected market size, the expected timing of our future clinical trials in RM, NVD, presbyopia, and DR/DME, and the extent of the Company's cash runway. 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) the success and timing of commercialization of any of Ocuphire's product candidates and (x) 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.

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Source: Ocuphire Pharma