# PL9643 FOR DRY EYE DISEASE

## SUMMARY OF PHASE 2 CLINICAL RESULTS
## NEXT STEPS
## EXECUTIVE SUMMARY

December 2020

# Overview of the PL9643 Compound



- Palatin's proven R&D team's primary scientific focus is the melanocortin system (MS) that involves the regulation of energy balance including food intake, sexual function and resolution of inflammatory responses.
- The melanocortin system mediates a diverse array of physiological processes, including inflammation, pigmentation, energy homoeostasis, and sexual behavior.
- The peptide PL9643 is an agonist at the melanocortin 1 receptor (MC1r) and melanocortin 5 receptor (MC5r). The base patent runs to 2041.
- In non-clinical, DED, proof-of-concept studies in mice, PL9643 significantly reduced corneal epithelial damage due to dry eye, with effects similar to Restasis®, a comparator reference agent, and were superior to both vehicle and untreated eyes.
- PL9643 represents a novel approach to treating Dry Eye Disease (DED) by targeting the ability of the MS to resolve pathological inflammation.

# Design of the PL9643-201 Phase 2 Study



- Multi-center, Randomized, Double–Masked and Placebo–Controlled Study Evaluating the Efficacy and Safety of PL9643 Ophthalmic Solution Compared to Placebo in Subjects with Dry Eye.
- The study enrolled 160 participants randomized in a 1:1 ratio into two arms, PL9643 or vehicle, at four sites in the United States.
- The intent to treat (ITT) population included all patients with mild-moderate-severe DED.
- The two prespecified primary endpoints were improvement in inferior corneal staining (sign) and ocular discomfort (symptom) as measured at the 12-week primary evaluation visit.
- Following a 2-week run-in period, patients were evaluated over a 12-week period. Patients were instructed to use the drops 3 times a day.
- There were 13 secondary efficacy endpoints and 6 safety measures.

# PL9643-201: Statistically Significant Clinical Results in Moderate-Severe Patients



- In the sub-population of moderate to severe patients (N=61), PL9643 achieved:
  - Statistical significance (P value <0.05 vs. vehicle) at week 2 and week 12 for multiple signs: inferior (primary sign endpoint), superior and total corneal staining, temporal, nasal and total conjunctival staining and tear film break-up time
  - Statistical significance (P value <0.05) at week 2 and week 12 for ocular discomfort
  - Multiple sign and symptom measures trended towards significance (P value <0.1 vs. vehicle).
- Trial results demonstrated an excellent ocular safety and tolerability profile.
- There were no serious adverse events associated with study treatment observed.
- Three patients on placebo and one patient on PL9643 (not deemed to be drug related) discontinued from the study. Importantly, there were no ocular, drug-related adverse events in the PL9643 subjects.
- Statistical significance for the primary endpoints was not achieved in the ITT population that included mild, moderate, and severe patients.
- Detailed study results are anticipated to be presented at the Association for Research in Vision and Ophthalmology (ARVO) 2021 Annual Meeting.

# PL9643: Commercial Opportunity in Dry Eye Disease



- DED is estimated to affect over 20 million people in the United States
  - Majority of people suffering from DED are in the moderate to severe category (>75%)
  - In most cases have had this condition for a prolonged period
- Annual sales in the United States for DED therapies >$3 billion
- Existing therapies for dry eye disease generally regarded as inadequate by many physicians and patients
  - Limited clinical trial evidence for both signs and symptoms
  - Often require weeks or months to demonstrate activity
  - >50% discontinue treatment due to slow onset, lack of efficacy or intolerance
- PL9643 product profile
  - Quick onset of efficacy and excellent tolerability profile are differentiating factors to current approved therapies
- Goals of the study achieved
  - Significant efficacy data obtained provides clear path forward for further development of PL9643 in DED

# PL9643 Dry Eye Disease Development – Next Steps