L-DOPA for the Treatment of Diabetic Retinopathy

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Diabetic Retinopathy (DR)

Normal

Diabetic Retinopathy

- Microaneurysm
- Macular edema
- Hemorrhage
- Cotton wool spots
Diabetic Retinopathy (DR)

- ~8M DR patients in US (2012) and expected to grow due to an aging population and increase in incidence of diabetes

- Diabetes patients in the US expected to reach 53M in 2025 (about 1 in 7 Americans); DR affects a third of diagnosed diabetics
Treatment

- Vitrectomy or laser photocoagulation are gold standards

- Peripheral vision sacrificed to preserve central vision
- Slows progression, but does not improve vision

- No FDA approved drug for the treatment of DR

- Unmet need for pharmacologic treatment which improves retinal function
Technology

- Repurpose L-DOPA for the treatment of DR

- Chronic, high dose L-DOPA regimen introduced in 1967 for treatment of Parkinson’s Disease (PD)

- L-DOPA is current “gold standard” in the drug treatment of PD

- Retinal dopamine (DA) deficiency is an underlying mechanism for early, diabetes-induced visual dysfunction

- Restoring retinal DA content with L-DOPA treatment can slow progression of visual loss and improve retinal function
Daily L-DOPA Treatment Restores Retinal DA Levels in Diabetic Mice

![Graph showing retinal dopamine levels with different treatment groups: No Diabetes + Vehicle, Diabetes + Vehicle, and Diabetes + L-DOPA. The graph indicates that L-DOPA treatment restores dopamine levels in diabetic mice.]
Daily L-DOPA Treatment Improves Visual Function in Diabetic Mice

- No Diabetes + Vehicle
- Diabetes + Vehicle
- Diabetes + L-DOPA
Value Proposition

• Repurposed drug opportunity

• Delays progression of disease and improves overall visual function

• Attractive and expanding market

• Dopamine-Related Pharmacological Treatment for Diabetic Retinopathy
  • PCT patent application to be filed by December 18th, 2014
  • Claims address methods of treatment
  • Additional IP may be available (reformulation, targeted delivery to the eye)
Thank You!