**[0004]** Direct injection into the eye, using conventional needles and syringes has been reported to be effective, but requires professional training and raises concerns about safety (Maurice, *J. Ocul. Pharmacol. Ther.* 17:393-401 (2001)). It also would be desirable to be able to minimize the number and/or frequency of eye injection treatments needed to deliver therapeutically effective amounts of drug to the ocular tissue sites that need it.

**[0005]** The suprachoroidal space (SCS) of the eye has been studied, and its cannulation described as a possible route for drug delivery. *See, e.g.*, Olsen, et al., *American J. Ophthalmology* 142(5): 777-87 (Nov. 2006).; PCT Patent Application Publication No. WO 2007/100745.

**[0006]** It therefore would be desirable to provide better, safer, more effective techniques for the direct delivery of therapeutic agents to posterior segment eye tissues, for example, to treat a posterior ocular disorder. It further would be desirable to provide better, safer, more effective techniques for the direct delivery of therapeutic agents to the SCS for the treatment of choroidal maladies, for example, choroidal maladies associated with vascular abnormalities. The present invention addresses these and other needs.

## SUMMARY OF THE INVENTION

**[0007]** Disclosed are to non-surgical ophthalmic therapies in human patients in need of such treatment, and more particularly to the infusion of a drug formulation into the suprachoroidal space of the eye for targeted, local drug delivery, for the treatment of posterior ocular disorders, choroidal maladies and other diseases associated with vascular abnormalities.

**[0007a]** In one aspect, there is provided use of a drug formulation comprising triamcinolone in the manufacture of a medicament for treating a posterior ocular disorder in a human subject in need thereof, characterized in that the drug formulation is to be administered non-surgically in an effective amount to the suprachoroidal space (SCS) of the eye of the human subject in need of treatment of the disorder, wherein the posterior ocular disorder is ocular inflammation, uveitis, retinal vein occlusion (RVO), wet age-related macular degeneration, macular edema, or diabetic macular edema.

## CLAIMS

1. Use of a drug formulation comprising triamcinolone in the manufacture of a medicament for treating a posterior ocular disorder in a human subject in need thereof, characterized in that the drug formulation is to be

administered non-surgically in an effective amount to the suprachoroidal space (SCS) of the eye of the human subject in need of treatment of the disorder, wherein the posterior ocular disorder is ocular inflammation, uveitis, retinal vein occlusion (RVO), wet age-related macular degeneration, macular edema, or diabetic macular edema.

2. The use of claim 1, wherein the uveitis is acute posterior uveitis.

3. The use of claim 1, wherein the effective amount of the drug formulation sufficient to elicit a therapeutic response when administered to the SCS is less than the effective amount of the drug formulation sufficient to elicit a therapeutic response when administered intravitreally, intracamerally, topically, parenterally or orally.

4. The use of claim 1, wherein the retention of the drug formulation in the posterior segment of the eye is greater than the retention of the drug formulation in the posterior segment of the eye when the drug formulation is administered intravitreally, intracamerally, topically, parenterally or orally.

5. The use of claim 1, wherein an intraocular $C_{max}$ of the drug formulation is greater than an intraocular $C_{max}$ of the drug formulation, when the drug formulation is administered intravitreally, intracamerally, topically, parenterally or orally.

6. The use of claim 1, wherein the systemic exposure of the drug formulation is less than the systemic exposure of the drug formulation when the drug formulation is administered intravitreally, intracamerally, topically, parenterally or orally.

7. The use of claim 1, wherein the non-surgically administering includes conveying the effective amount of the drug formulation to the SCS via a microneedle having a length of from about 500 μm to about 1500 μm.

8. The use of claim 1, wherein the drug formulation comprises a suspension of microparticles or nanoparticles.

9. The use of claim 1, wherein the drug formulation is triamcinolone acetonide.

10. The use of claim 1, wherein the intraocular pressure of the eye of the subject varies by no more than about 10% during the administration of the drug formulation.

11. The use of claim 3, wherein a dosage of the drug sufficient to elicit a therapeutic response when administered to the SCS is 50% or less of a dosage of the drug sufficient to elicit a therapeutic response when administered intravitreally, intracamerally, topically, parenterally or orally.

12. The use of claim 8, wherein the microparticles have a $D_{50}$ of 2 μm or less.

13. The use of claim 1, further comprising a second drug to be non-surgically administered to the eye of the subject, wherein the second drug comprises a VEGF modulator.

14. The use of claim 13, wherein the VEGF modulator is a VEGF antagonist.

15. The use of claim 14, wherein the VEGF antagonist is selected from a VEGF-receptor kinase antagonist, an anti-VEGF antibody or fragment thereof, an anti-VEGF receptor antibody, an anti-VEGF aptamer, a small molecule VEGF antagonist, a thiazolidinedione, a quinoline or a designed ankyrin repeat protein (DARPin).

16. The use of claim 14, wherein the VEGF antagonist is aflibercept.

17. The use of claim 13, wherein the second drug further comprises a PDGF antagonist.

18. The use of claim 13, wherein the posterior ocular disorder is diabetic macular edema.