CLAIMS

1. A polymeric eye insert, the insert comprising:

one or more mucoadhesive polymers that are biocompatible with the ocular surface and tear film of the eye and a plasticizer or softener; wherein upon insertion of the polymeric eye insert in the cul-de-sac of the eye, the thickness of the tear film increases for at least 30 minutes post-insertion;

wherein the one or more mucoadhesive polymers are selected from the group consisting of: hyaluronic acid or salts thereof, hydroxypropylmethylcellulose (HPMC), methylcellulose, tamarind seed polysaccharide (TSP), guar, hydroxypropyl guar (HP guar), scleroglucan poloxamer, poly(galacturonic) acid, sodium alginate, pectin, xanthan gum, xyloglucan gum, chitosan, sodium carboxymethylcellulose, polyvinyl alcohol, polyvinyl pyrrolidine (PVP), carbomer, polyacrylic acid and combinations thereof;

wherein the plasticizer or softener is polyethylene glycol (PEG); and

wherein the insert is comprised of approximately 40% HP guar, approximately 10% PVP, approximately 40% sodium hyaluronate, and approximately 10% polyethylene glycol (PEG).

2. The polymeric eye insert of claim 1, further comprising 1-200 ppm menthol.

3. The polymer eye insert of claim 1, further comprising 20-100 ppm menthol.

4. The polymeric eye insert of claim 1, wherein the insert does not include an additional pharmaceutically active agent.

5. The polymeric eye insert of claim 1 wherein the insert comprises one or more pharmaceutically active agents.

6. The polymeric eye insert of claim 3 wherein the one or more pharmaceutically active agents is selected from the group consisting of:

atropine derivatives which are not nitric oxide donors, travoprost co-drug with nitric oxide, lubricants, steroids, antibiotics, nonsteroidal anti-inflammatory drugs, anti-histamines, anti-virals, anti-bacterials, vasoconstrictors, and prostaglandin analogs.

7. The polymeric eye insert of claim 1 wherein the tear film thickness does not return to pre-insertion thickness until approximately two hours after insertion.

8. The polymeric eye insert of claim 1 wherein upon insertion in the cul-de-sac of the eye, the thickness of the tear film increases up to at least two hours post-insertion.

9. The polymeric eye insert of claim 1 wherein the insert shape is a film, a rod, a sphere, an annulus, or an irregular shape having a maximum size in any single dimension of 5-6 mm.

10. The polymeric eye insert of claim 9, wherein said insert has a circular shape about 5 mm in diameter, a thickness of 50-400 µm, and a water content of 1% to 50% w/w.

11. The polymeric eye insert of claim 10, wherein said insert has a thickness of about 150-250 µm, and a water content of 30 to 50% w/w.

12. The polymeric eye insert of claim 1, wherein said HP guar has a weight average molecular weight of 2 to 4 million Daltons and said sodium hyaluronate has a weight average molecular weight of 0.1 to 2 million Daltons.

13. Use of the polymeric eye insert of any one of claims 1-12 for treating an ocular disorder, wherein the polymeric eye insert is for application to the cul-de-sac of the eye.

14. The use according to claim 13, wherein said ocular disorder is selected from the group consisting of dry eye, eye redness, myopia, glaucoma, allergy, and inflammation.