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“Device to prevent posterior capsule opacification after cataract surgery”

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Posterior capsule opacification (PCO) is the most common and costly vision-disrupting complication of cataract surgery. Using a primary lens cell model system we have developed to study PCO, we have discovered that, a set of small molecule drugs, block one or more of the four cellular processes that cause PCO. Remarkably, a single, one-hour treatment with the drug is sufficient. During cataract surgery, the cloudy natural lens is replaced by an artificial plastic lens referred to as an intraocular lens (IOL). We have shown that therapeutic doses of the drugs can be delivered from an IOL that had been incubated in a concentrated stock of drug. Funds are requested for studies that will: (1) define the optimal parameters to load drug into the most commonly used IOLs in the world, and (2) provide initial pharmacokinetic data of drug release from IOLs. With this essential information in hand, we will be well positioned to secure licensing and sponsored research agreements with pharma, and/or IOL manufacturers. Our longer-range goal is to conduct in vivo studies, first in rabbits subjected to cataract surgery and ultimately in humans.



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