

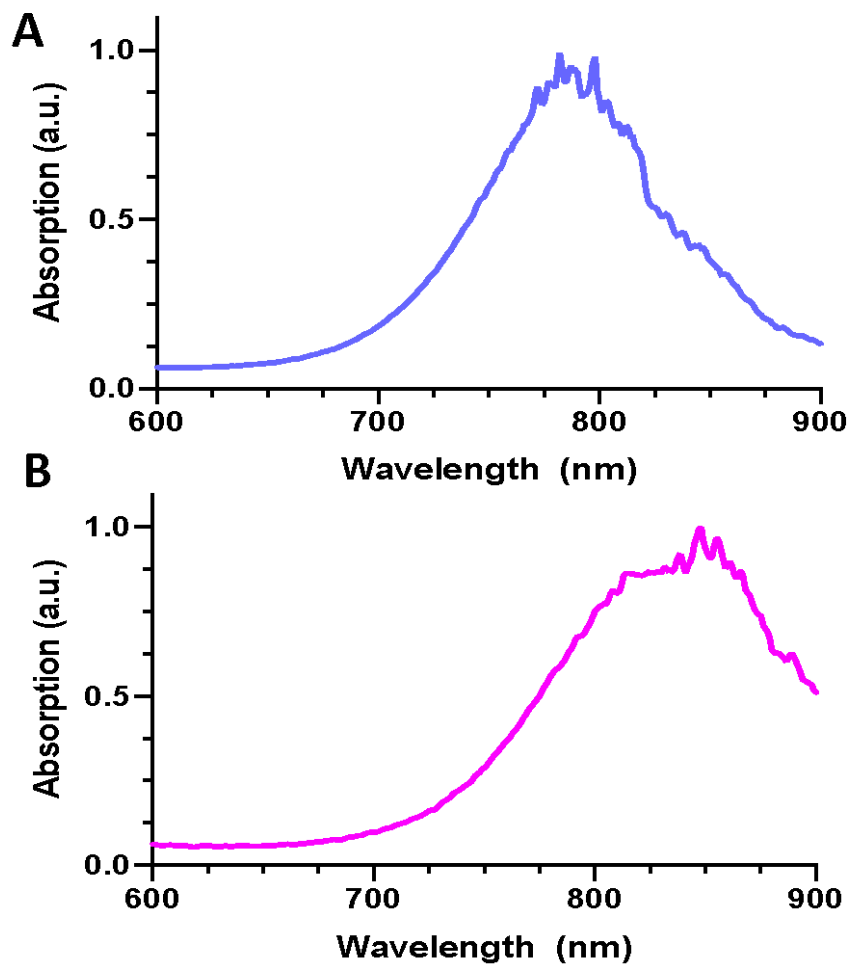
SUPPLEMENTARY INFORMATION

**Layer-specific nanophotonic delivery of therapeutic opsin-
encoding genes into retina**

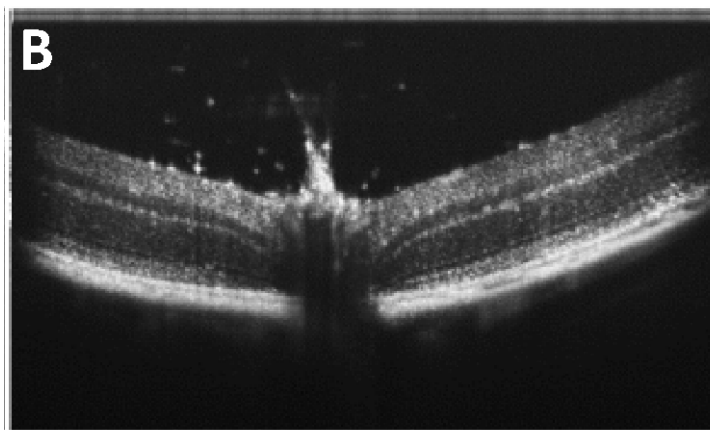
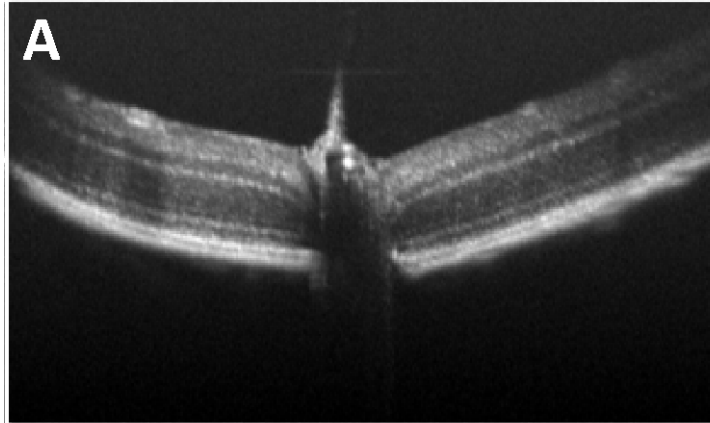
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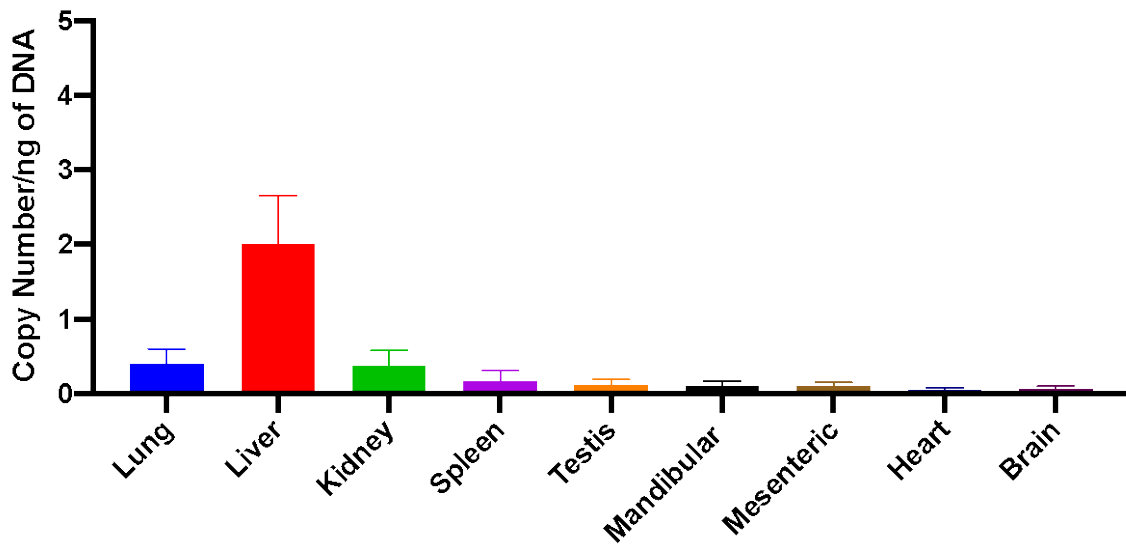
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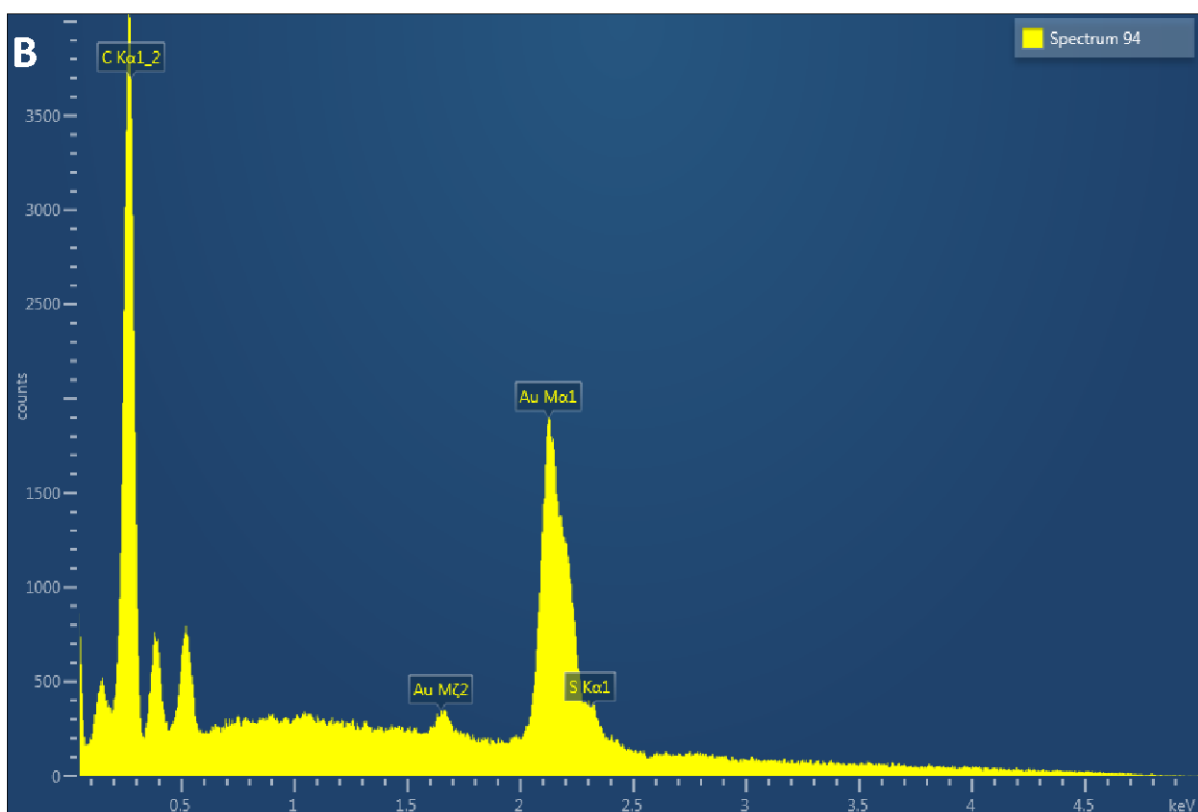
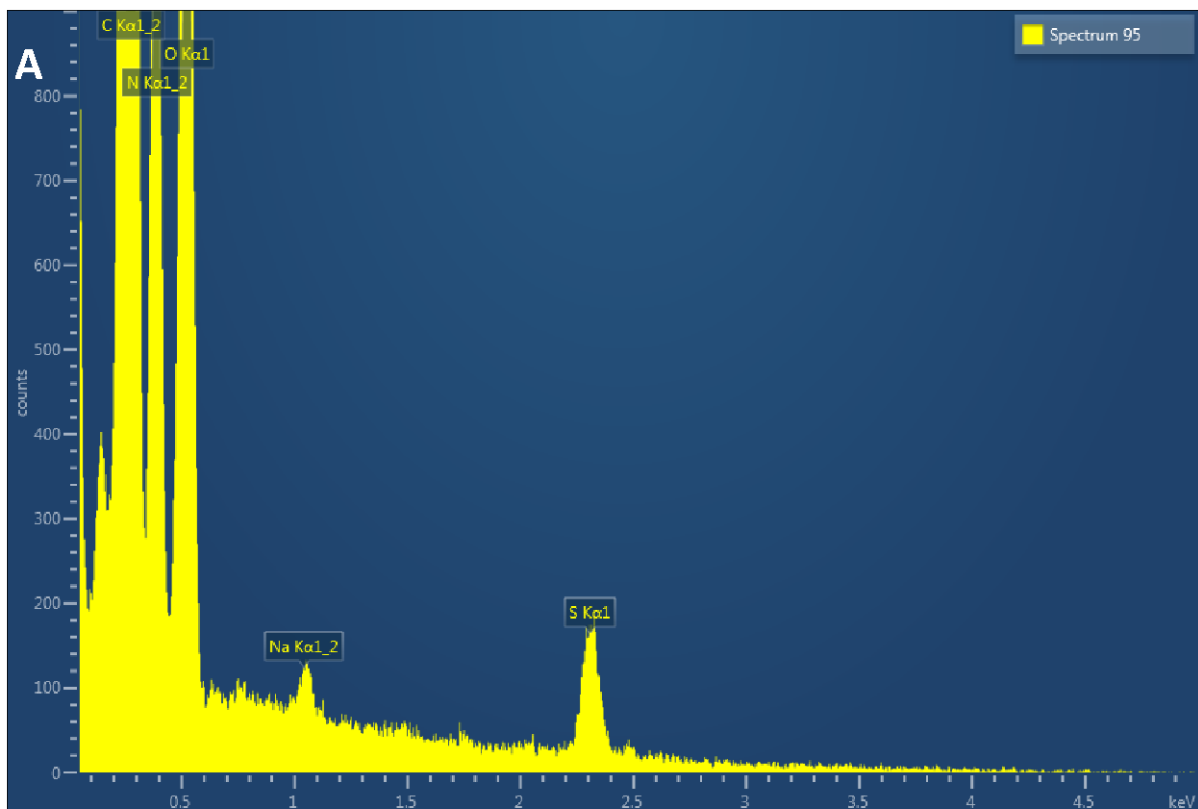
Suppl. Fig. 1. Tunable Gold NanoRods (GNRs). For binding of GNRs to cells, the GNRs with 780 nm SPR peak (A) are functionalized with Thy1 antibody and those with 850 nm SPR peak (B) are sensitized with PKC α antibody.



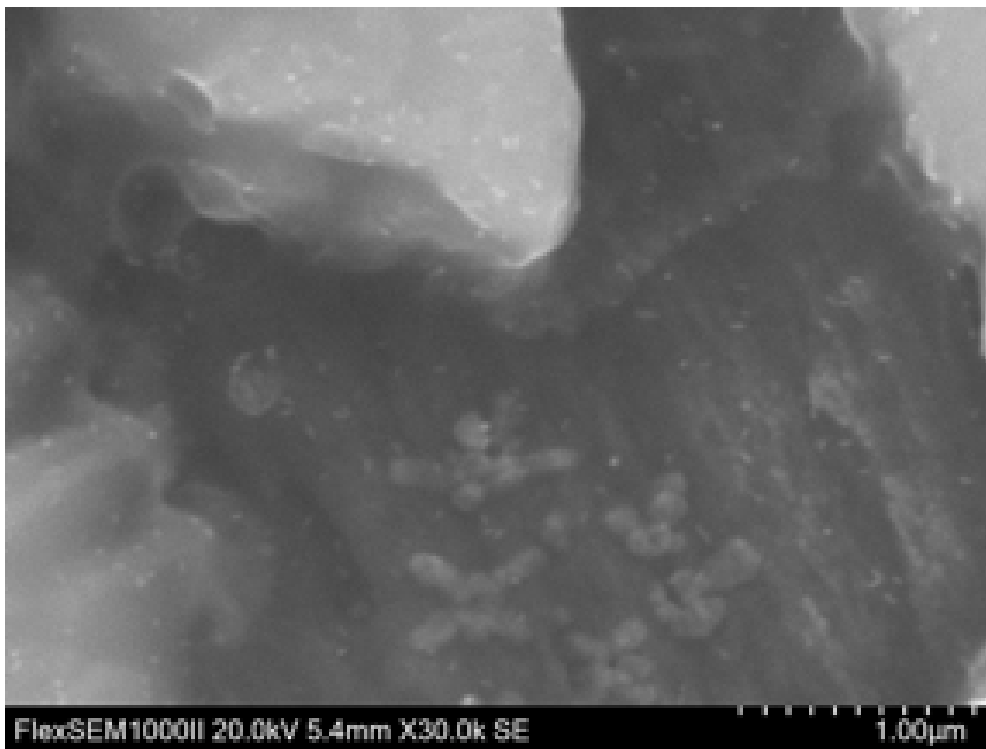
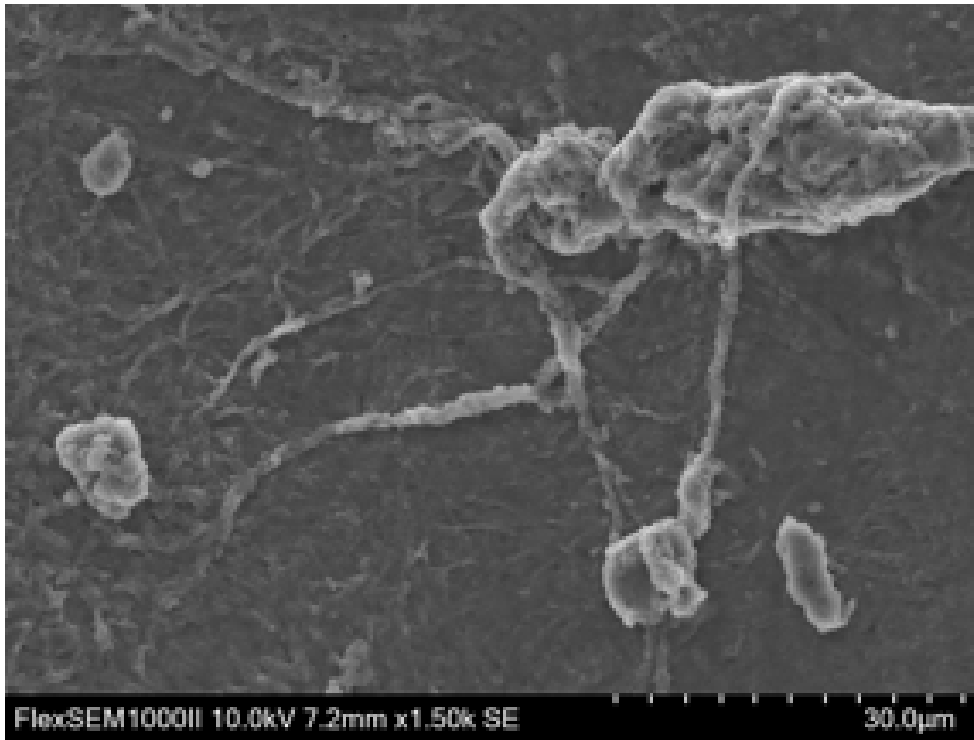
Suppl. Fig. 2. SDOCT imaging shows fGNR binding to targeted retinal layer. B-scan OCT images of retina (A) before, and (B) 7d after optical delivery using dose (1800 mJ/mm²: 30 mW, 60 sec, 1 mm² area).



Suppl. Fig. 3. Biodistribution of optically delivered MCO-II to retina. qPCR based quantification of MCO-II sequences after 2 weeks of optical delivery showing very small or non-detectable quantities of MCO-II plasmids in tissues outside of the treated eyes. N=3 animals, $\text{Av} \pm \text{SD}$.



Suppl. Fig. 4. Energy Dispersive X-ray analysis showing different compositional information on retina: (A) without gold nanorods, and (B) with attached gold nanorods.



Suppl. Fig. 5. Clearance of intravitreally injected GNRs from eye. Low (Top) and high (Bottom) magnification SEM images 1 week after GNR injection shows absence of GNRs.