Supplementary Material

Adhesion test: amnion bonded to cornea using PTB

A 180° peel test was used to measure the adhesion of the amnion to cornea. A 6 mm x 10 mm strip of rabbit cornea and a 5 mm x 20 mm strip of amnion (1 cm stained with RB) were used.

- The RB-stained amnion was placed on the cornea anterior surface (8 mm overlap) and photobonded to cornea using 100 J/cm² green light (Fig. S1A).
- A strip of thin cardboard backing (5 mm x 15 mm) was glued to the amnion and another one to the cornea. This is needed to grip the tissues in the instrument clamps.
- The amnion is folded over. The backing attached to the cornea is gripped by the lower clamp and the backing attached to the amnion is gripped in the upper clamp (Fig. S1B).

Bonding amnion to cornea is not cytotoxic to keratocytes

Although RB is initially in the amnion, some RB diffuses from the membrane into the cornea where it might cause phototoxicity to stromal keratocytes. Thus, RB-stained amnion was bonded to freshly harvested rabbit eyes using 100 and 200 J/cm². The central cornea that was protected from light provided the unirradiated control area. After irradiation, the amnion was removed and the eyes were cultured for 24 h. The presence of keratocytes was evaluated on H&E-stained vertical sections 24 h post-treatment. The number of nuclei per 0.25 mm² field were counted. As shown in Fig. S2, there were no significant differences between groups indicating that the PTB treatment was not toxic to keratocytes.