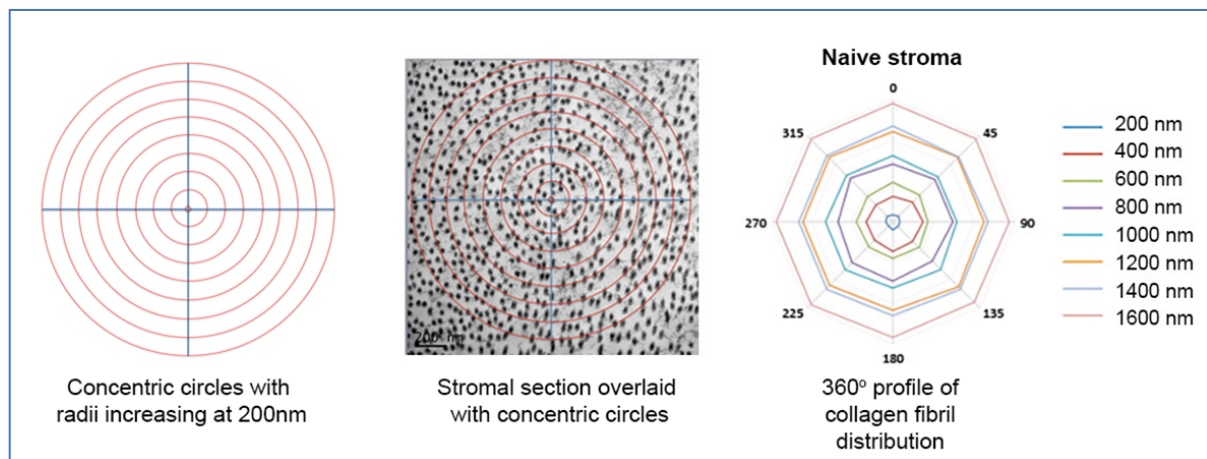


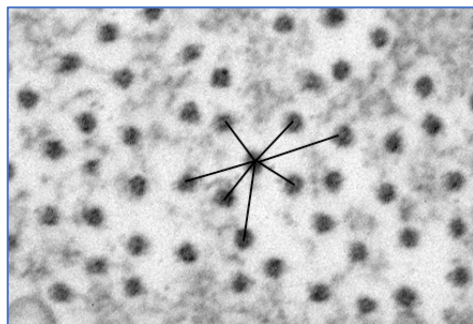
## Combined therapy using human corneal stromal stem cells and quiescent keratocytes to prevent corneal scarring after injury

Vishal Jhanji, Mithun Santra, Andri K Riau, Moira L. Geary, Tianbing Yang, Elizabeth Rubin, Nur Zahirah Binte M Yusoff, Deepinder K Dhaliwal, Jodhbir S Mehta, Gary Hin-Fai Yam

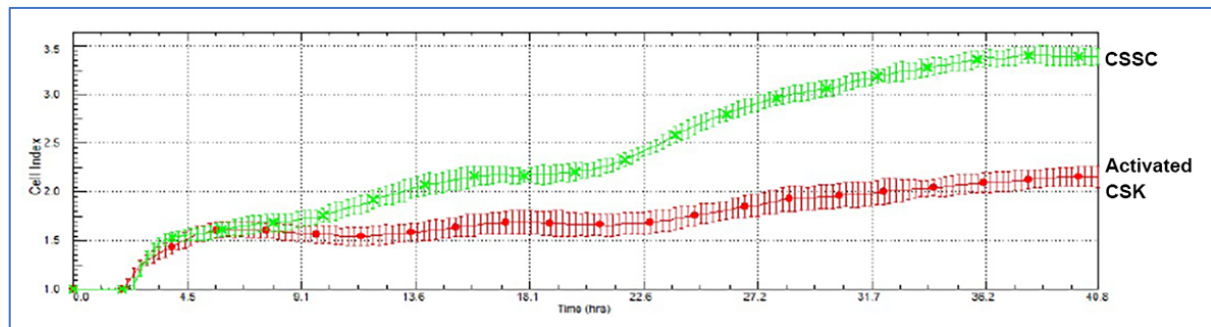
### Supplementary Materials



**Supplementary Figure S1.** 360° fibril distribution profile measured by concentric circle analysis method.



**Supplementary Figure S2.** Measurement of inter-fibrillar distances with a randomly chosen collagen fibril.



**Supplementary Figure S3. Growth character of primary CSSC versus activated CSK from same donor cornea by xCelligence assay.**

**Supplementary Table S1. Donor cornea information**

<b>Lab no.</b>	<b>Age</b>	<b>Gender</b>	<b>Cause of Death</b>	<b>Hours from death to Optisol</b>	<b>Days in Optisol preservation</b>
<b>436</b>	33	M	Multiple cerebral infarcts	5.5	7
<b>439</b>	57	F	Anoxia brain injury	6	9
<b>466</b>	51	F	Myocardial infarct	6	8
<b>515</b>	67	M	Atherosclerotic cardiovascular disease	5.5	6
<b>534</b>	25	M	Head trauma	6.5	9
<b>544</b>	41	M	STEMI heart attack	7.5	8
<b>555</b>	72	F	Decompensated heart failure	6.5	12
<b>572</b>	21	M	Anoxia brain injury	9	10
<b>576</b>	68	M	Myocardial infarct	10	9
<b>577</b>	65	M	Myocardial infarct	8.5	10
<b>621</b>	58	F	Acute myocardial infarct	8	8
<b>624</b>	65	M	Hypoxic ischemic encephalopathy	9.5	10
<b>641</b>	45	M	Gun shot	11	12

**Supplementary Table S2. qPCR primers**

	GenBank #	Forward (5'-3')	Reverse (5'-3')
Mouse ACP5	NM_013556.1	GTTGGATACAGGCCAGACTTTGTTG	GATTCAACTTGCCTCATCTTAGGC
Mouse $\alpha$ SMA	NM_009696.3	TGTGCTGGACTCTGGAGATG	GAAGGAATAGCCACGCTCAG
Mouse Col3A1	NM_009930.2	CGTAAGCACTGGTGGACAGA	CGGCTGGAAAGAAGTCTGAG
Mouse CTSK	X94444.1	ATGTGGGGGCTCAAGGTTCTG	CATATGGGAAAGCATCTTCAGAGTC
Mouse FN1	NM010233.2	TACTCGAGCCCTGAGGATGG	GCAAGGCAACCACACTGACT
Mouse MMP9	NM_013599.5	CTTCTGGCGTGTGAGTTTCCA	ACTGCACGGTTGAAGCAAAGA
Mouse TNC	NM_035737.2	GACTGCCCTGGGAACTGTAA	CATAGCCTTCGAAGCACACA
Mouse TSG-6	NM_007115.3	AAGCACGGTCTGGCAAATACAAGC	ATCCATCCAGCAGCACAGACATGA
Human ABCG2	NM_004827	TGCAACATGTACTGGCGAAGA	TCTTCCACAAGCCCCAGG
Human ALDH3A1	NM_001135168	CATTGGCACCTGGAACCTACC	GGCTTGAGGACCACTGAGTT
Human AQP1	NM_198098.2	AATACCCGGTGGGGAACAAC	CACACCATCAGCCAGGTCAT
Human $\alpha$ SMA	NM_001613.2	CTGTTCCAGCCATCCTTCAT	CCGTGATCTCCTTCTGCATT
Human B3GnT7	NM_145236.2	AGTCTACCCCTGGTCAGTT	AGCAGTTAGTGGTGGTCACG
Human CD34	NM_001025109	CCTCAGTGTCTACTGCTGGTCT	GGAATAGCTCTGGTGGCTTGCA
Human CHST6	NM_021615.4	TACCGGCCTGTGTACTCTGA	ACTAATTTCTGGGGGTGCGAG
Human Col3A1	NM_000090.3	TCTTTGAATCCTAGCCCATCTG	TGTGACAAAAGCAGCCCCATAA
Human CXCR4	NM_003467	CTCCTCTTTGTCATCACGCTTCC	GGATGAGGACACTGCTGTAGAT
Human FN1	NM_212482.4	CCACCCCCATAAGGCATAGG	GTAGGGGTCAAAGCACGAGTCATC
Human Kera	NM_007035	ATCTGCAGCACCTTCACCTT	CATTGGAATTGGTGGTTTGA
Human Lum	NM_002345.3	CCTGGTTGAGCTGGATCTGT	TGGTTTCTGAGATGCGATTG
Human MCP1	NM_002982.4	GAGAGGCTGAGACTAACCAGA	ATCACAGCTTCTTTGGGACACT
Human Nestin	NM_006617	GCTCAGGTCTGGAAGGTC	TAAGAAAGGCTGGCACAGGT
Human Pax6	NM_001604	CAATCAAAACGTGTCCAACG	TAGCCAGGTTGCGAAGAAGT
Human SPARC	NM_003118.4	ATCTAAATCCACTCCTTCCACAG	CACCGTTAATGTATTCATTAAATC

**Supplementary Table S3. Antibodies used for immunostaining**

<b>Antibody anti-mouse epitope [clone]</b>	<b>Source</b>
$\alpha$ SMA [1A4]	Invitrogen MA5-11547
Col3A1 [C-15]	Santa Cruz sc-8781
FN	Millipore AB2033
TNC [F-17]	Santa Cruz sc-9872

<b>Antibody anti-human epitope [clone]</b>	<b>Source</b>
ALDH3A1	Proteintech 15578-1-AP
$\alpha$ SMA [1A4]	Invitrogen MA5-11547
Col3A1 [C-15]	Santa Cruz sc-8781
FN	Millipore AB2033
Keratocan	Sigma HPA039321
Ki67	DAKO M7240
Lum	Sigma HPA001522
TNC [F-17]	Santa Cruz sc-9872