Electronic Supplementary Material (ESI) for RSC Advances.


# Supplementary Information

## Preservation of biomacromolecular composition and ultrastructure of decellularized cornea using perfusion bioreactor

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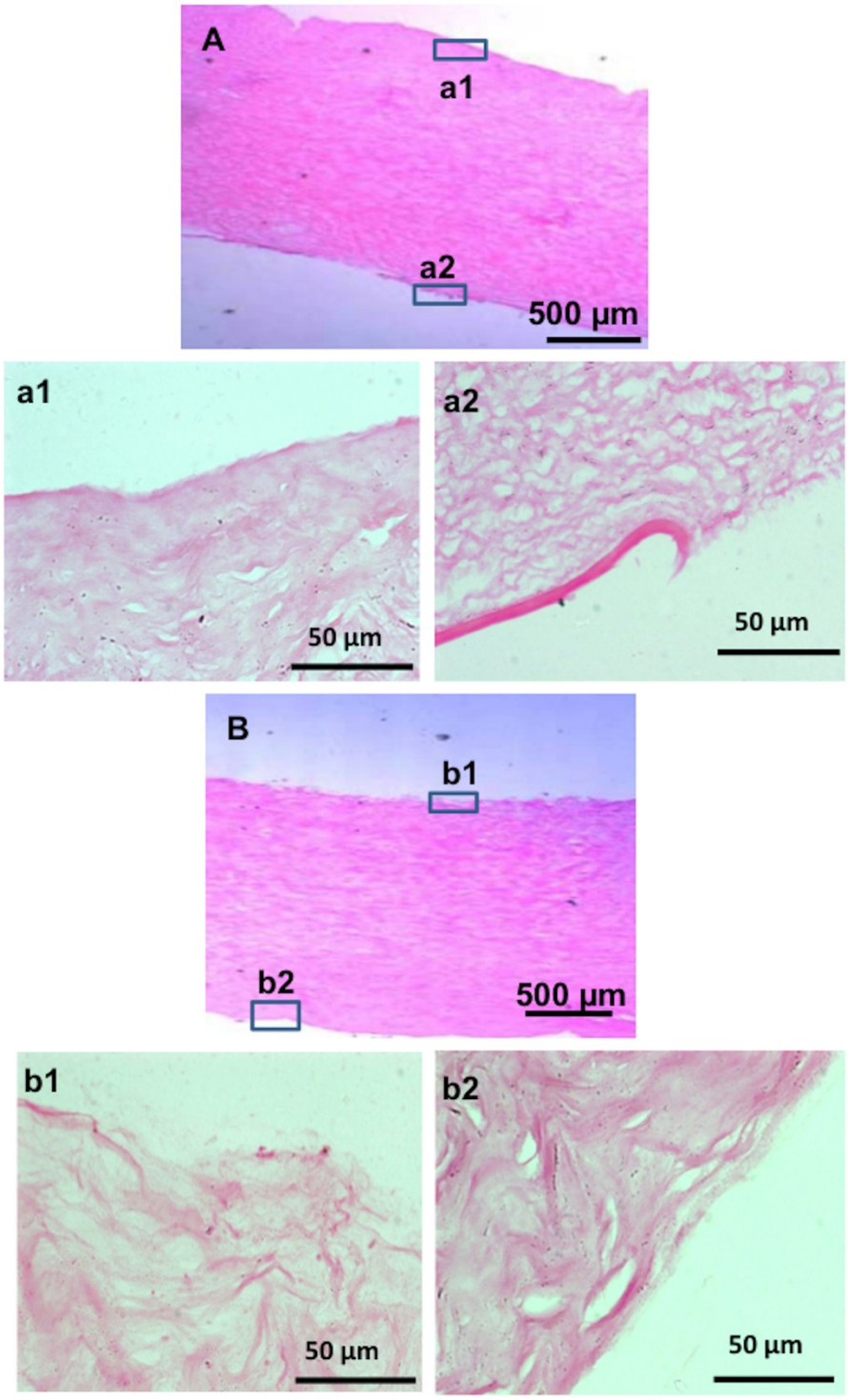
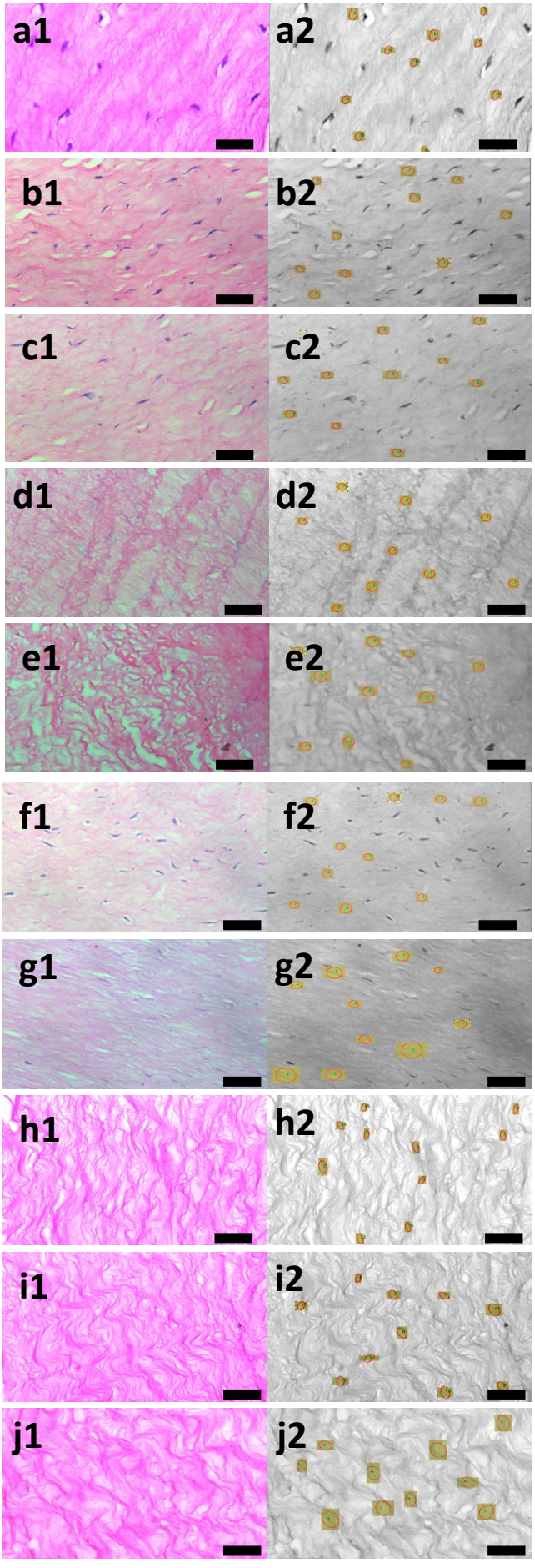
**Supplementary Figure 1.** H&E staining of perfused cornea with TRITON (0.1%) at: (A) 50 µl/min displaying partial disruption of Bowman's (a1) and Descemet's membrane (a2), (B) 100 µl/min displaying complete disruption of membranes (b1, b2).



**Supplementary Figure 2.** Coherency of decellularized cornea was analyzed by H&E stained light micrographs using orientationJ software. Left panel: Light micrographs of H&E (Scale 200 μm); Right panel: Coherency coefficients calculation depicted by red ellipses inside the yellow region of interest in H&E stained sections of decellularized cornea (Scale 200 μm). Top to bottom: (a1-a2): native cornea, **Physical methods**; (b1-b2): liquid nitrogen, (c1-c2): freeze-thaw, **Chemical methods;** (d1-d2): 0.1% SDS in orbital shaker, (e1-e2): 0.5% SDS in orbital shaker, (f1-f2): 0.1% TRITON in orbital shaker, (g1-g2): 0.5% TRITON in orbital shaker, **TRITON in perfusion chamber at different flow rates**; (h1-h2): 10 μl/min, (i1-i2): 50μl/min, (j1-j2): 100 μl/min.


a1
a2
b1
b2
c1
c2
d1
d2
e1
e2
f1
f2
g1
g2
h1
h2
i1
i2
j1
j2