

SUPPLEMENTARY INFORMATION

Bioinstructive Polymer Fibre Mats to Reduce Bacterial Pathogen Colonisation

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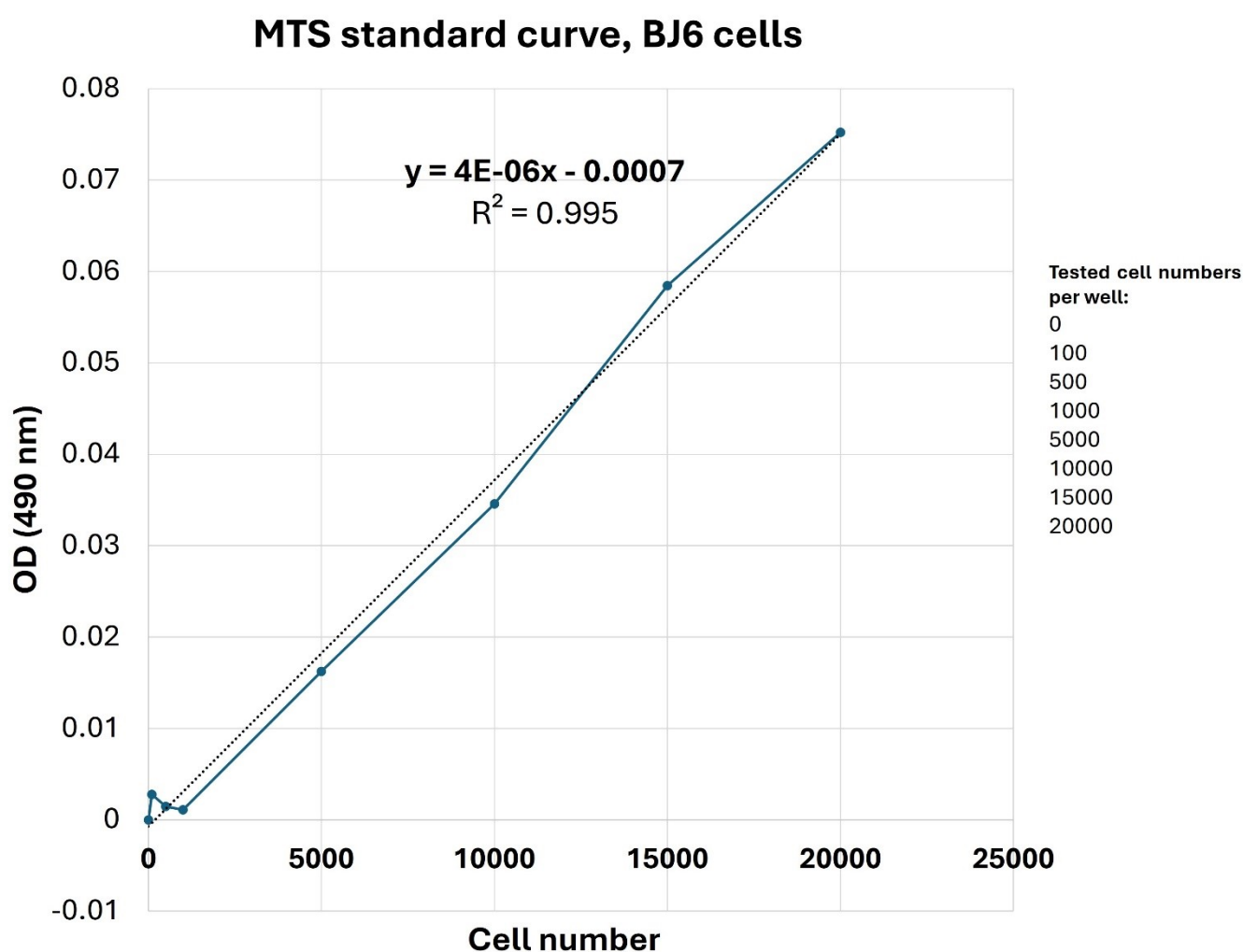


Figure S1: Standard curve for the MTS proliferation assay. Passage 7 cells seeded at 0, 100, 500, 1000, 5000, 10000, 15000 and 20000 cells per well in a 24 well plate. MTS reagent was added, and the optical density of aliquots were measured at 490 nm and the average used to plot the standard curve

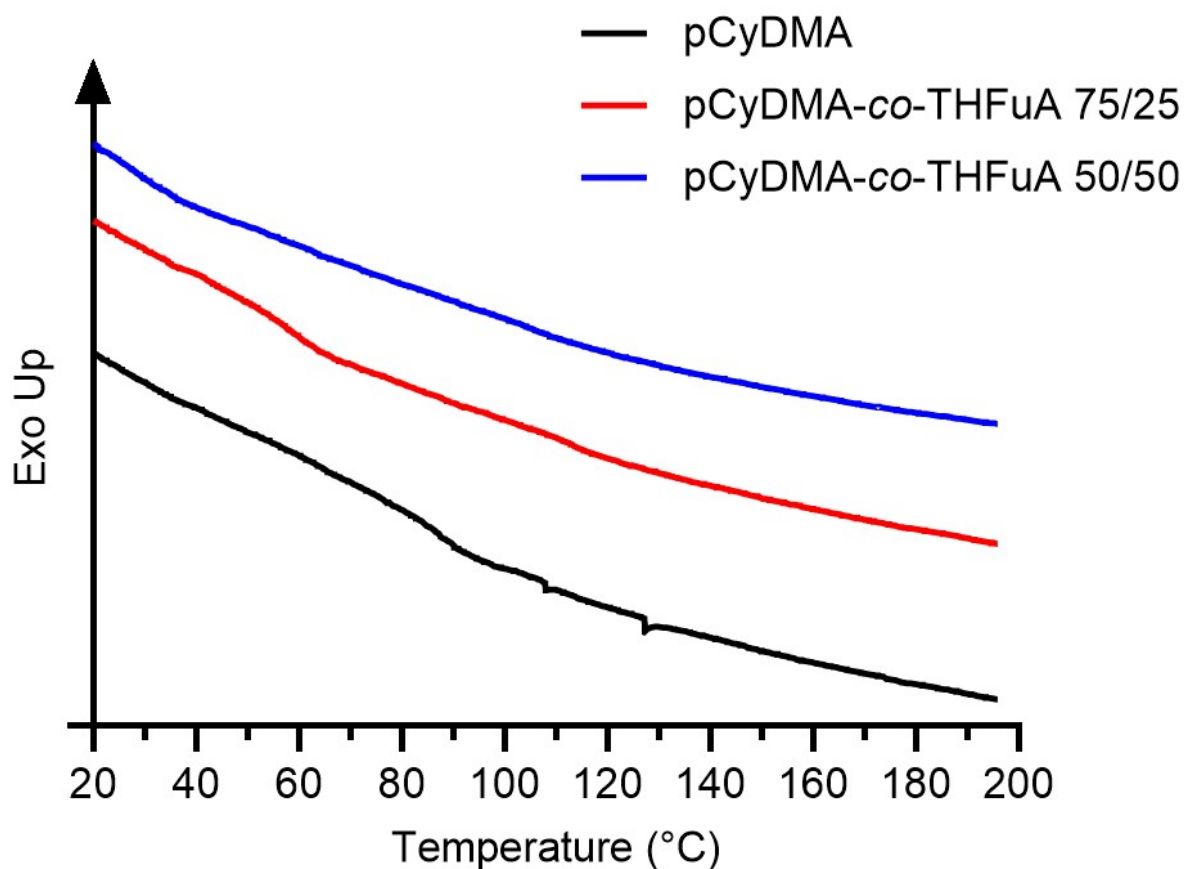


Figure S2: Differential scanning calorimetry results for pCyDMA, pCyDMA-co-THFuA 75/25 and pCyDMA-co-THFuA 50/50.

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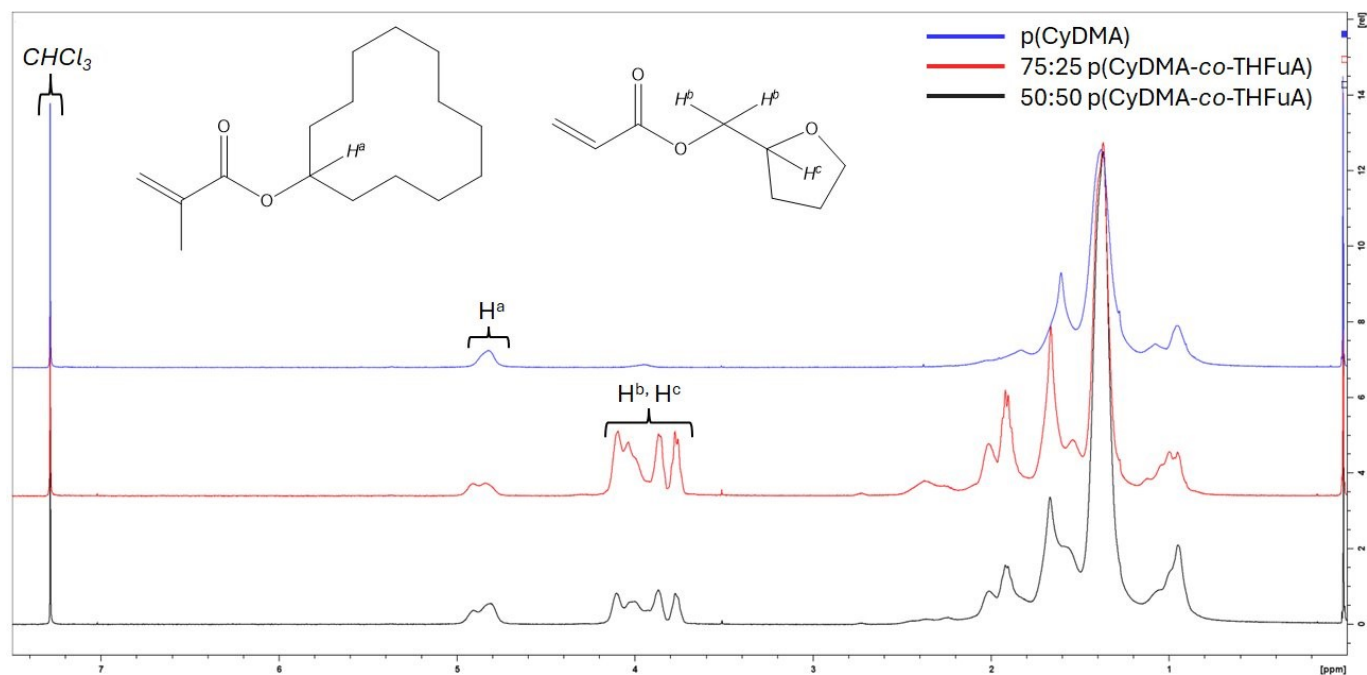


Figure S3: Stacked ^1H NMR spectra for p(CyDMA), 75:25 and 50:50 p(CyDMA-co-THFuA) showing the characteristic resonances of CyDMA and THFuA that were used for analysis

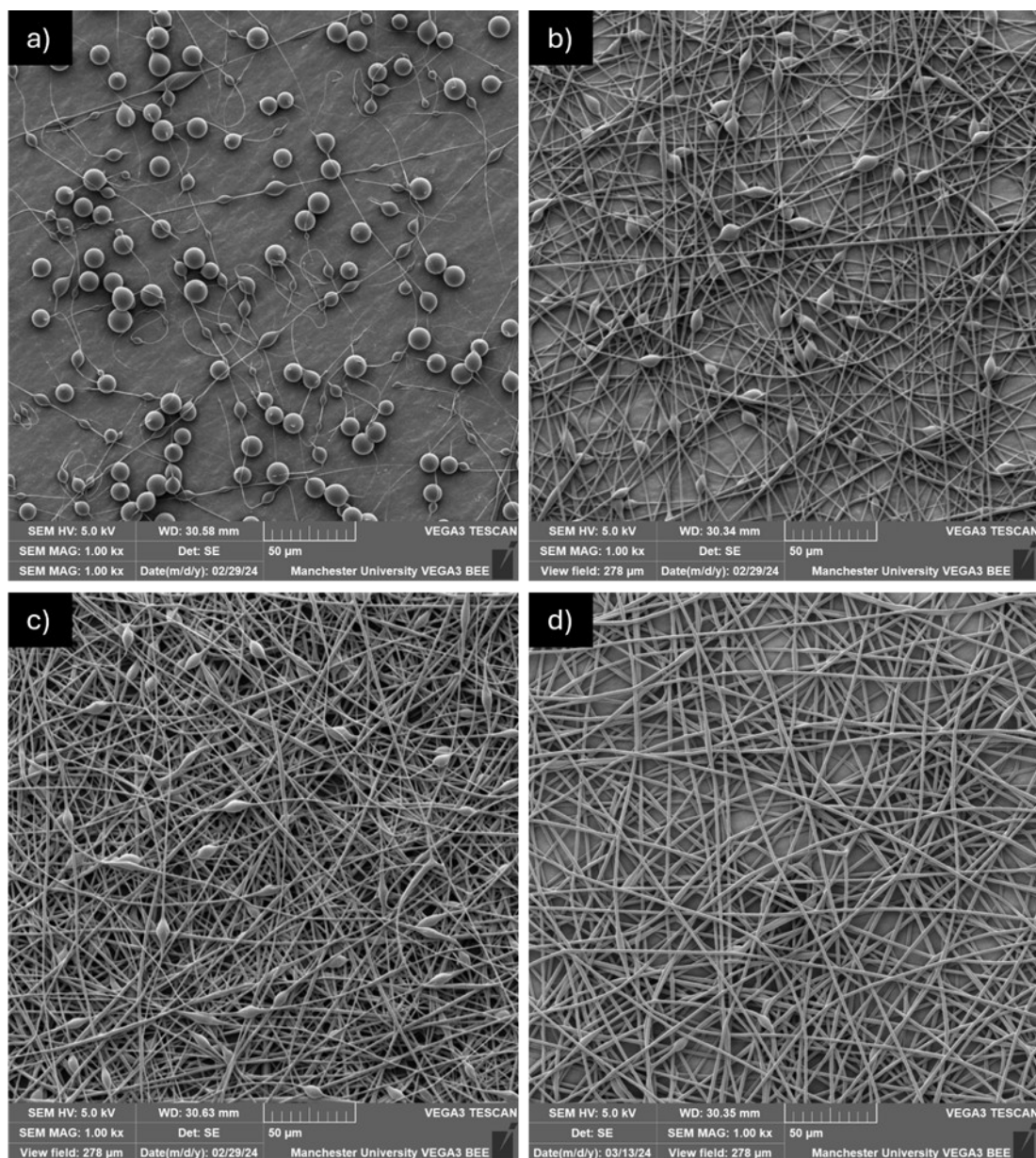


Figure S4: Scanning electron micrographs showing improvement in fibre formation from a 20% w/v solution of pCyDMA-co-THFuA (50:50) in a) DCM, b) 6.5 :1 DCM:EtOH, c) 4:1 DCM:EtOH, and d) 2:1 DCM:EtOH. All electrospinning experiments were performed with a -20 kV emitter voltage and a $+1$ kV collector voltage, solution flow rate of 3.5 ml h^{-1} with a working distance of 240 mm . All images are taken at $1000\times$ magnification and scale bars represent $50 \text{ }\mu\text{m}$.

Table S1: Average fibre diameter of pCyDMA-co-THFuA 50:50 spun under the same conditions from varying DCM:EtOH solvent mixes as determined from the micrographs in Figure S3. Data from 100 fibres in a single image. For fibre measurements, bead diameters were not considered

DCM:EtOH	Average Fibre Diameter (μm)	Standard Deviation (μm)
1:0	N/A	N/A
6.5:1	1.28	0.35
4:1	1.36	0.36
2:1	1.88	0.24

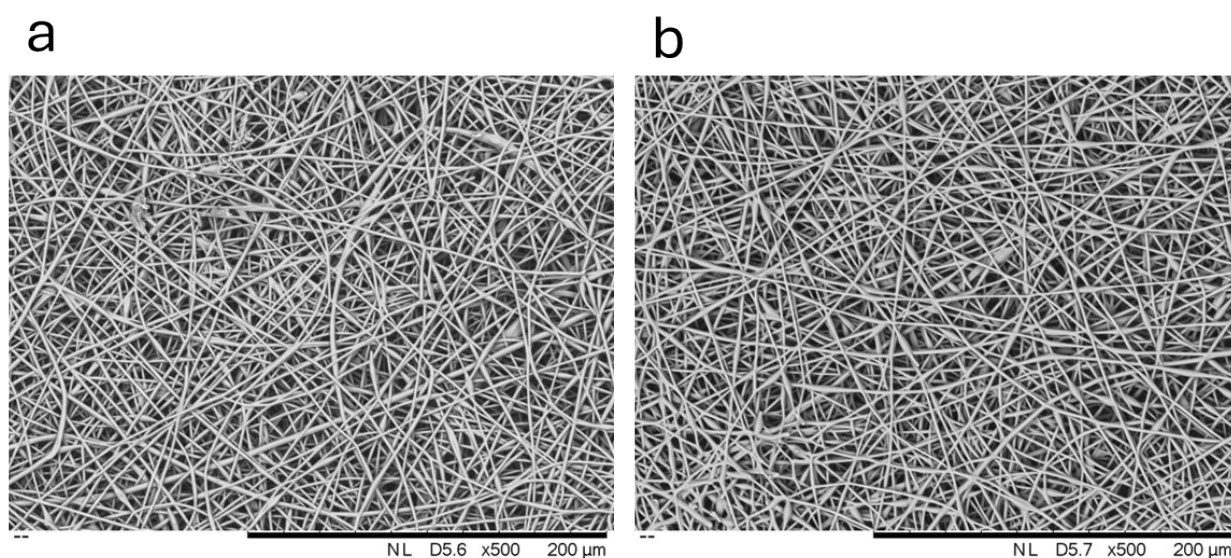
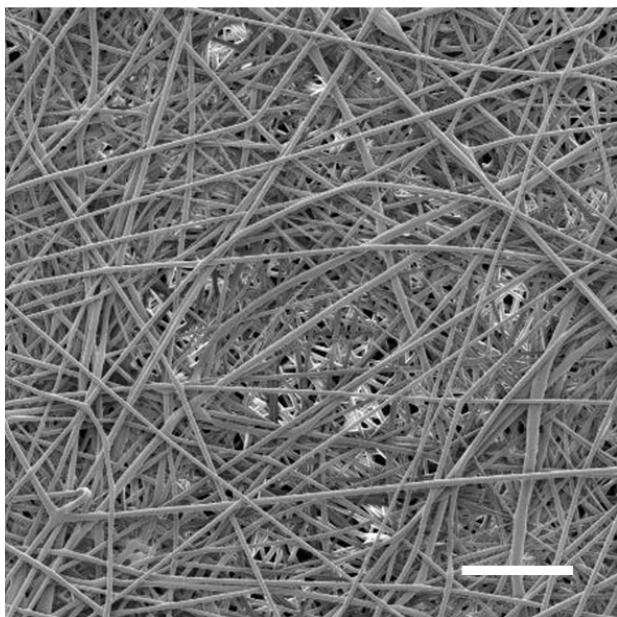


Figure S5: SEM images showing bio-instructive CyDMA-co-THFuA (50:50) polymer fibres (a) before gamma sterilisation and (b) after gamma sterilisation with a dose between 28.00 and 32.89 kGy.

a



b

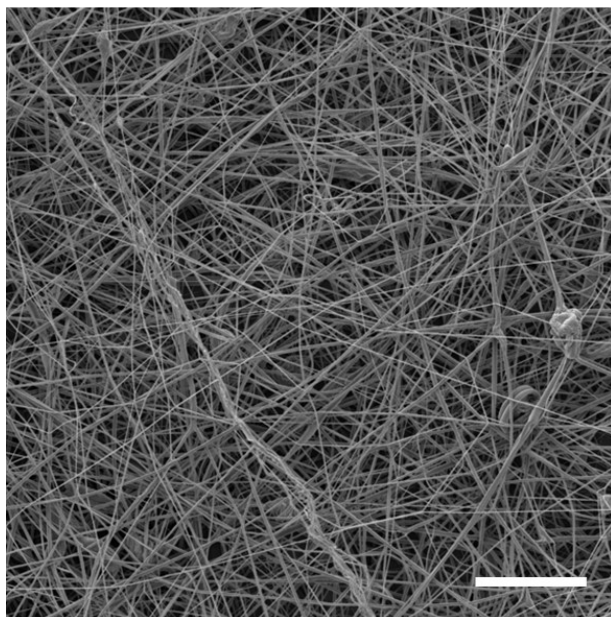


Figure S6: SEM images showing bio-instructive fibres used in biological studies (a) CyDMA-co-THFuA (50:50) $2.28 \pm 0.65 \mu\text{m}$ (b) PLA fibres $1.20 \pm 0.39 \mu\text{m}$. Measurements were taken from $N = 400$ fibres. Scale bar represents $50 \mu\text{m}$.