

**Supplementary Information**

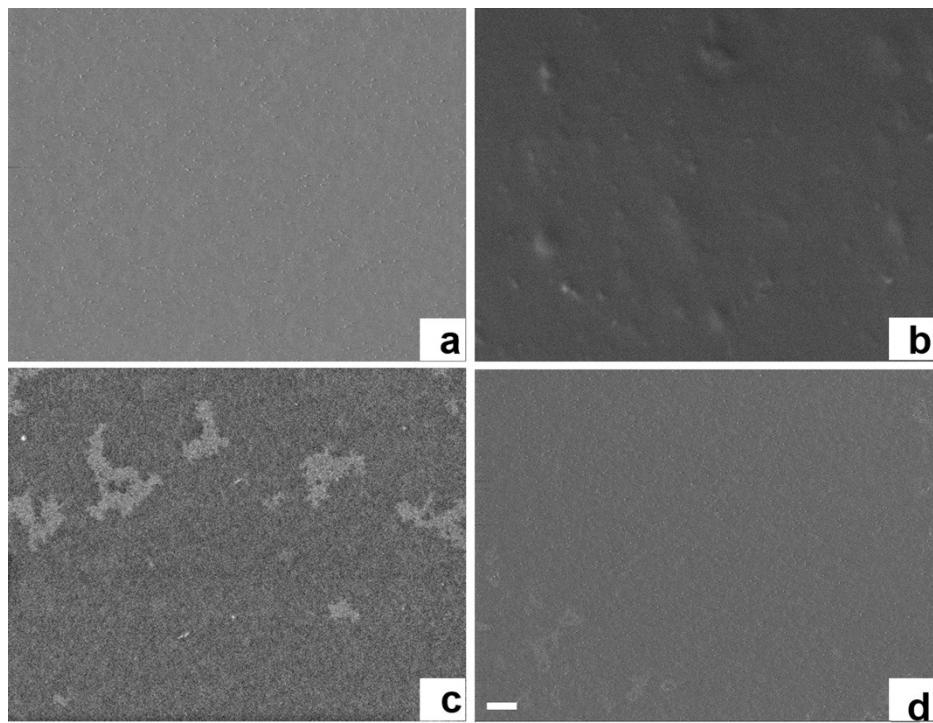
**Cross-Linked Silk Sericin-Gelatin 2D and 3D Matrices for  
Prospective Tissue Engineering Applications**

**Jadi Praveen Kumar<sup>a</sup>, Nandana Bhardwaj<sup>b</sup>, Biman B. Mandal<sup>a\*</sup>**

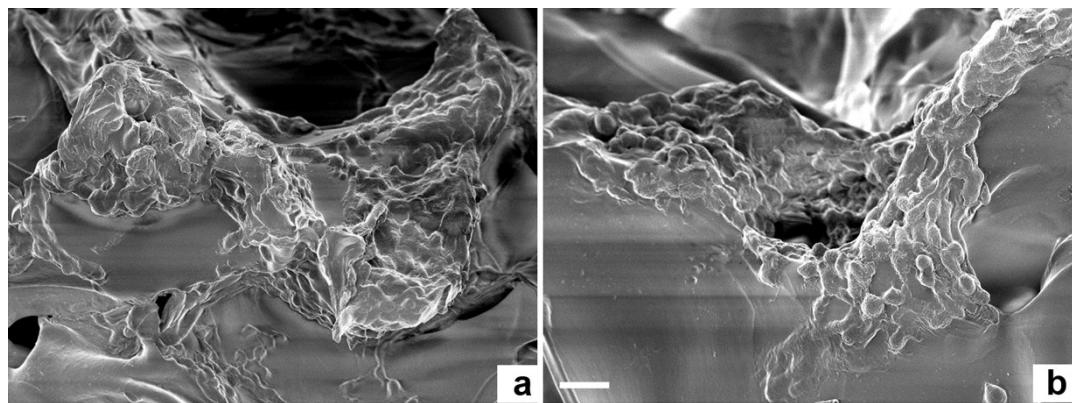
<sup>a</sup>Biomaterial and Tissue Engineering Laboratory, Department of Biosciences and Bioengineering, Indian Institute of Technology Guwahati, Guwahati-781039, Assam, India

<sup>b</sup>Life Sciences Division, Institute of Advanced Study in Science and Technology (IASST), Guwahati-781035, Assam, India

\*Author for correspondence: [biman.mandal@iitg.ernet.in](mailto:biman.mandal@iitg.ernet.in), Phone: +91 3612582225



**Fig.S1.** FESEM images of (a) gelatin (b) GBMS (c) GPRS and (d) GAAS 2D matrices. (Scale bar 2  $\mu$ m)



**Fig.S2.** Representative FESEM images of L929 cells cultured on (a and b) GSS matrices showing cell migration inside the scaffold pores. (Scale bar 20  $\mu$ m).

**Table S1** The gated percentage of L929 and HaCaT cells after culturing on control, GSS and gelatin matrices.

| S.<br>No | Cell<br>type   | Days of<br>culture | Types of<br>matrices | % of gated population |              |              |              |
|----------|----------------|--------------------|----------------------|-----------------------|--------------|--------------|--------------|
|          |                |                    |                      | Sub-G1<br>(M1)        | G1 (M2)      | S (M3)       | G2 (M4)      |
| 1        | L929<br>cells  | Day 1              | Control              | 0.37 ± 0.38           | 51.67 ± 1.98 | 16.75 ± 0.64 | 28.41 ± 1.92 |
|          |                |                    | GBMS                 | 0.16 ± 0.05           | 56.03 ± 1.24 | 15.64 ± 0.42 | 25.65 ± 0.67 |
|          |                |                    | GPRS                 | 0.18 ± 0.02           | 53.23 ± 1.77 | 17.31 ± 0.15 | 26.98 ± 1.70 |
|          |                |                    | GAAS                 | 0.18 ± 0.05           | 53.3 ± 2.87  | 17.26 ± 0.20 | 26.02 ± 3.38 |
|          |                |                    | Gelatin              | 0.16 ± 0.01           | 52.48 ± 2.89 | 16.98 ± 0.33 | 28.19 ± 2.83 |
|          |                | Day 3              | Control              | 0.32 ± 0.10           | 63.37 ± 0.39 | 19.93 ± 0.26 | 15.46 ± 0.41 |
|          |                |                    | GBMS                 | 0.44 ± 0.09           | 69.92 ± 0.28 | 16.88 ± 0.67 | 11.86 ± 0.36 |
|          |                |                    | GPRS                 | 0.74 ± 0.44           | 65.73 ± 0.85 | 18.24 ± 0.21 | 14.50 ± 0.83 |
|          |                |                    | GAAS                 | 0.50 ± 0.22           | 65.34 ± 1.08 | 18.43 ± 0.59 | 15.04 ± 0.86 |
|          |                |                    | Gelatin              | 0.36 ± 0.10           | 63.05 ± 0.92 | 19.74 ± 0.33 | 16.04 ± 0.85 |
| 2        | HaCaT<br>cells | Day 1              | Control              | 0.08 ± 0.03           | 42.37 ± 0.32 | 24.13 ± 0.88 | 30.13 ± 1.17 |
|          |                |                    | GBMS                 | 0.06 ± 0.00           | 56.03 ± 2.17 | 20.15 ± 0.68 | 20.88 ± 1.50 |
|          |                |                    | GPRS                 | 0.06 ± 0.01           | 55.32 ± 0.18 | 20.33 ± 0.40 | 21.48 ± 0.47 |
|          |                |                    | GAAS                 | 0.07 ± 0.03           | 55.36 ± 0.81 | 19.38 ± 0.52 | 23.25 ± 0.75 |
|          |                |                    | Gelatin              | 0.10 ± 0.00           | 52.01 ± 3.34 | 19.93 ± 0.15 | 22.81 ± 1.01 |
|          |                | Day 3              | Control              | 1.06 ± 0.56           | 62.09 ± 1.82 | 22.47 ± 0.39 | 13.08 ± 1.95 |
|          |                |                    | GBMS                 | 0.81 ± 0.04           | 64.68 ± 0.77 | 21.27 ± 0.49 | 12.10 ± 0.29 |
|          |                |                    | GPRS                 | 1.01 ± 0.07           | 67.49 ± 0.92 | 19.52 ± 0.49 | 10.25 ± 0.48 |
|          |                |                    | GAAS                 | 0.88 ± 0.16           | 65.40 ± 0.26 | 21.06 ± 0.18 | 11.43 ± 0.45 |
|          |                |                    | Gelatin              | 0.90 ± 0.13           | 66.18 ± 0.90 | 19.15 ± 0.14 | 12.49 ± 0.67 |

