Electronic Supplementary Material (ESI) for RSC Advances.

Electronic Supplementary Information†

Alternative technique for patterning cells on poly (ethylene glycol) diacrylate hydrogels

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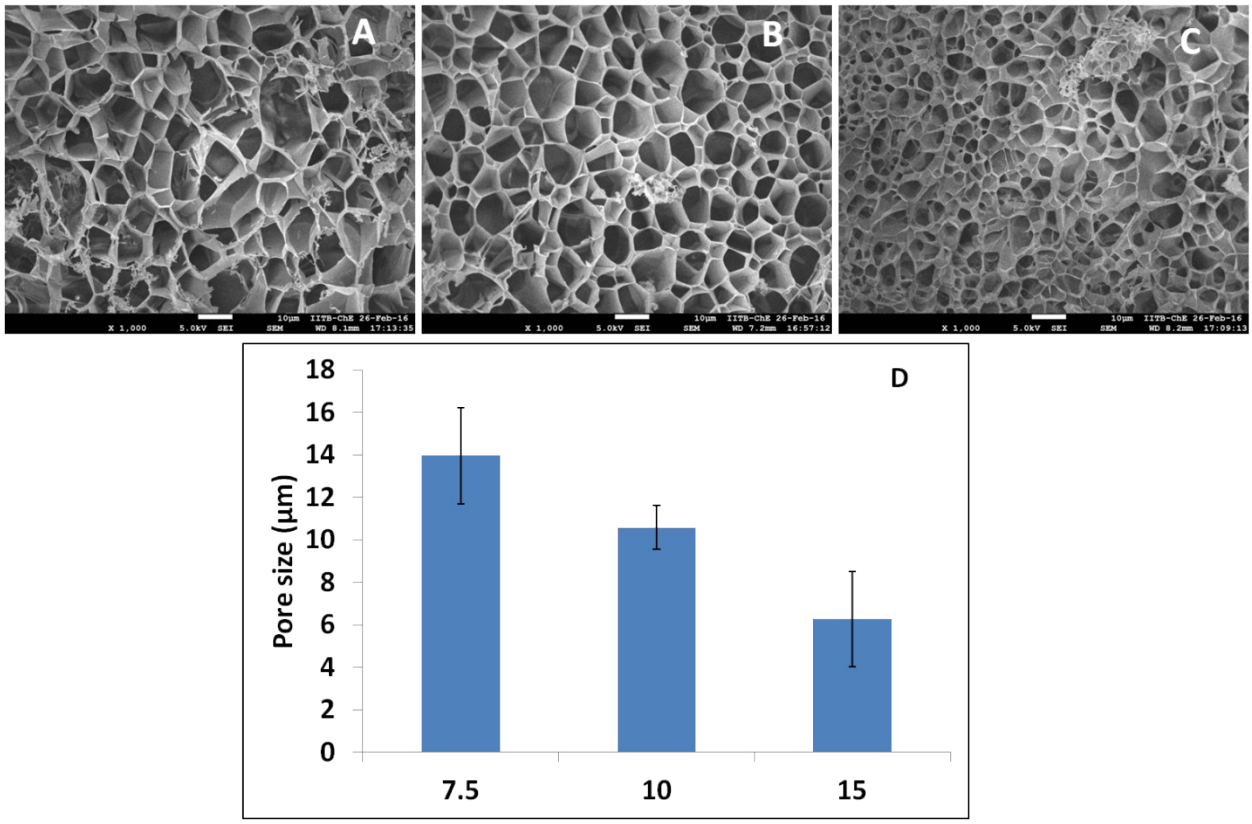

Fig. S1 Cryo-SEM micrograph of PEGDA hydrogel. (**A)** 7.5 **(B)** 10 **(C)** 15 (w/v %) PEGDA hydrogel; scale bar 10 µm, **(D)** Quantification of pore size from cryo-SEM micrographs using ImageJ.

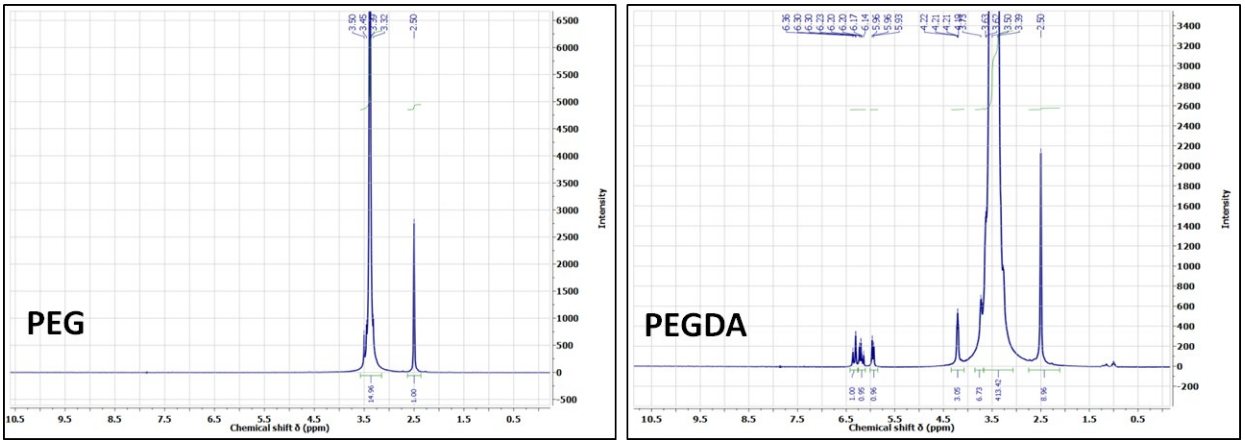

Fig. S2 ^{1}H NMR Spectrum of PEG-OH and PEGDA. Degree of acrylation, i.e. conversion of terminal OH group with vinyl group was determined by finding the ratio of area under the backbone PEG peak (~4.2 ppm) to that under the vinyl peak (~5.9-6.3 ppm).

Table. S1 Degree of acrylation of PEGDA calculated from NMR data using the equation mentioned below.

Batch (PEG:ACRL molar ratio)	**Degree of acrylation**
PEGDA-1 (0.46:1)	98.6247
PEGDA-2 (0.36:1)	98.67524

Degree of acrylation or the degree of substitution of PEG was calculated as the ratio of vinylic peak intergral (~5.9-6.3) to the backbone PEG peak integral.

Degree of acrylation (PEGDA) =

$$\frac{(Vinylic\ integral/6)}{\textbf{(vinylic integral/6)} + \textbf{(Oxyethylene integral/4)} \times \textbf{(44/PEG molecular weight)}} \times 100$$

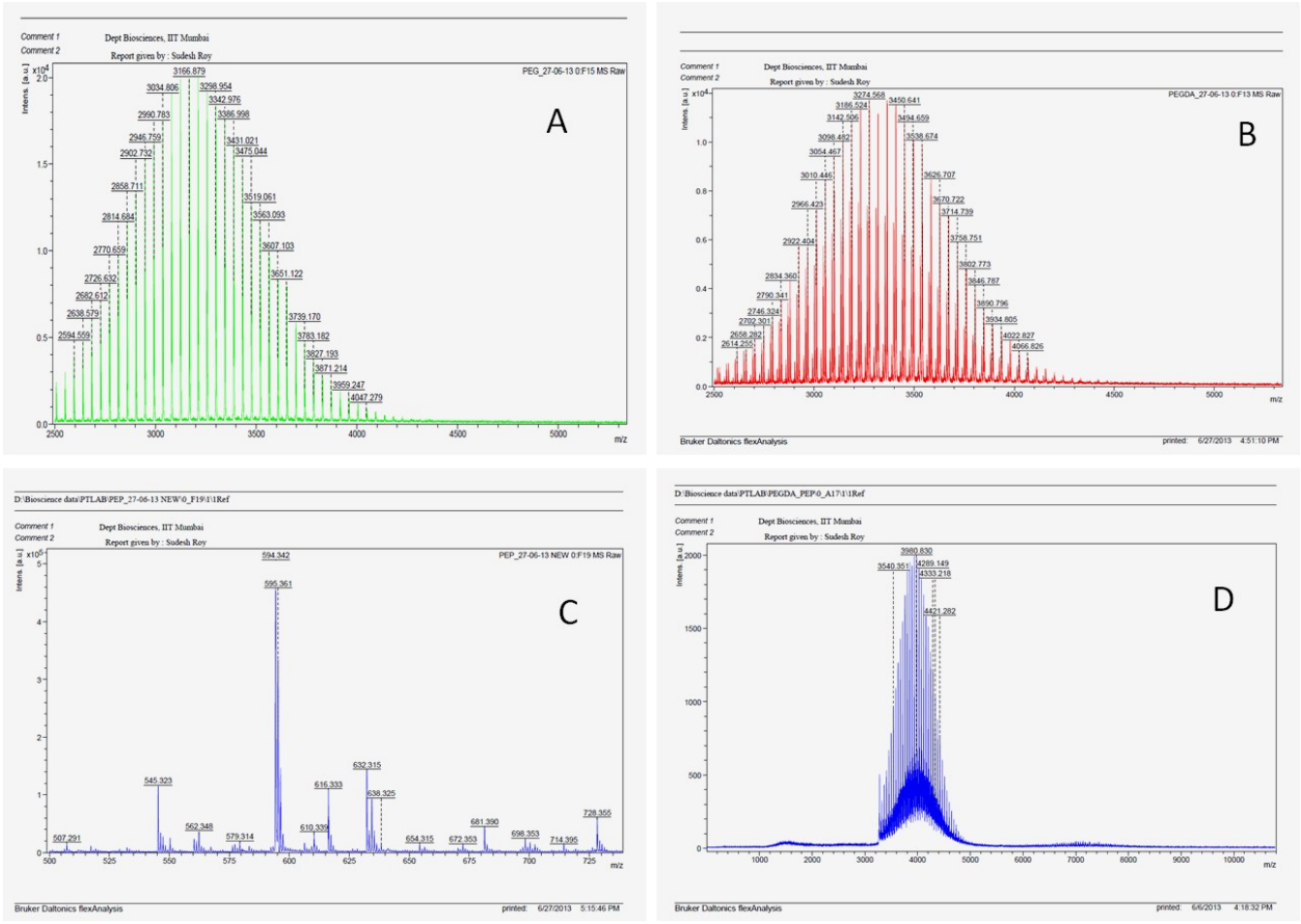

Fig. S3 MALDI-TOF spectrum showing the mass peak of (A) PEG-OH, (B) PEGDA (C) CGRGDS peptide and (D) PEGDA-CGRGDS conjugate.

Table S2. Table showing number average molecular weight (M_n), weight average molecular weight (M_w) and polydispersity index (PDI) of PEG and PEGDA.

	M_n	M_w	PDI
PEG	**3407.45**	**3494.53**	**1.025**
PEGDA	**3495.45**	**3572.36**	**1.022**

The number average molecular weight (M_n), weight average molecular weight (M_w) and polydispersity index (PDI) were calculated from MALDI data using the equations below:

$$M_n = \frac{\sum MiNi}{\sum Mi\,Ni}$$

$$\mathbf{M_w} = \frac{\sum Mi^2\, Ni}{\sum MiNi}$$

$$\mathbf{PDI} = \frac{Mw}{Mn}$$

M_i= Molecular weight of *i* mass

Ni= Signal intensity in the peak area of *i* mass

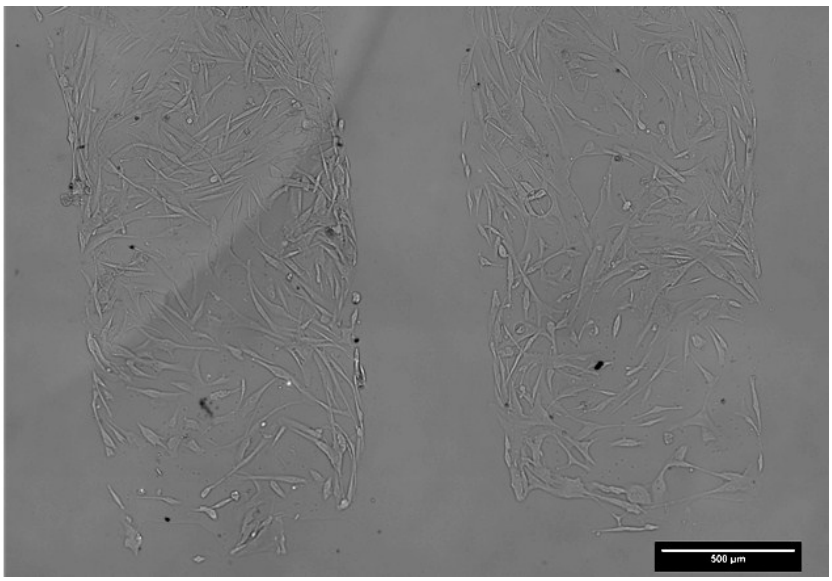

Fig. S4 Optical micrograph showing adhesion of HDF cells via pepide patterned as lines on surface of inert PEGDA hydrogel (Scale bar 500 µm).