Electronic Supplementary Material (ESI) for Journal of Materials Chemistry
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Supplementary Information: Journal of Materials Chemistry

Cell migration and growth on photo-immobilized vascular endothelial growth factor (VEGF) isoforms

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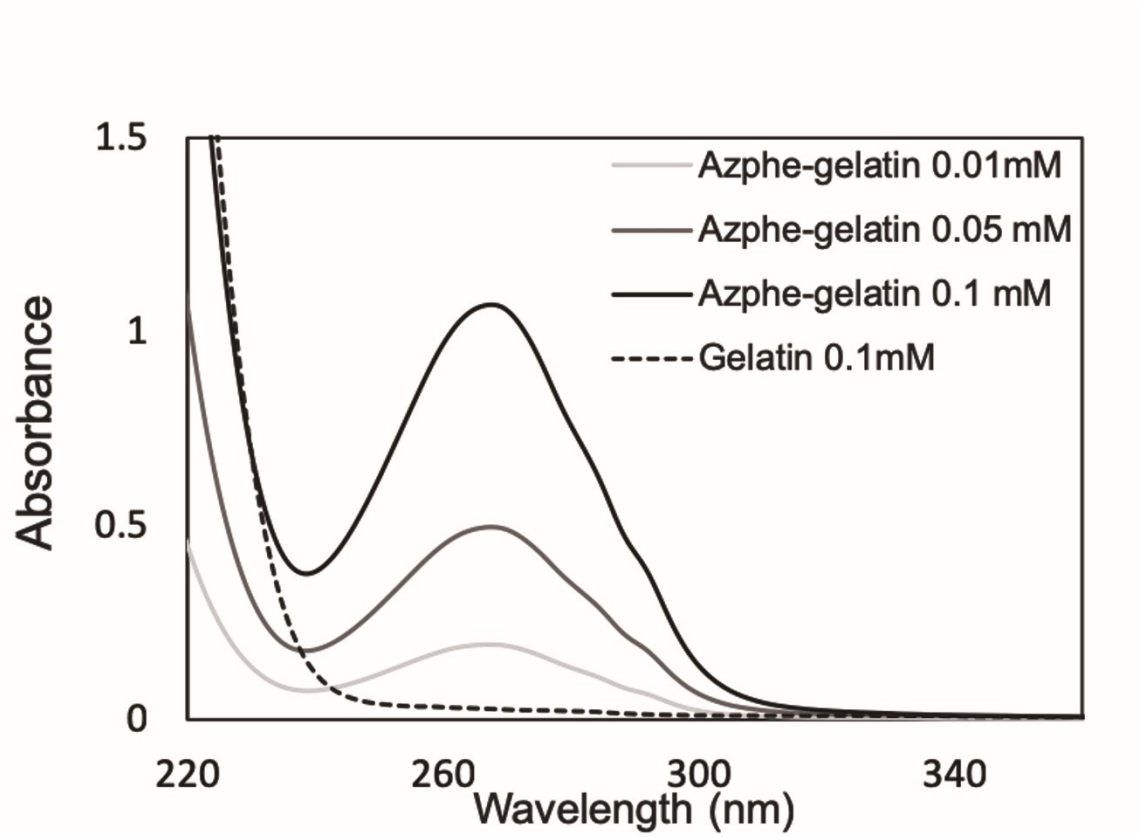
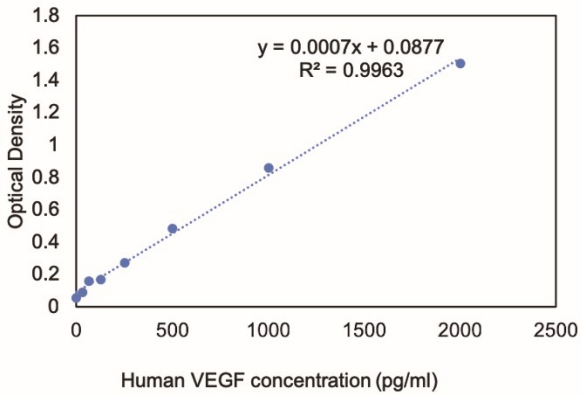


Figure S1. UV spectra of gelatin and Azphe-gelatin. The UV absorbance was measured at 220–320 nm. The phenyl azide group of Azphe-gelatin showed a specific absorbance at 270 nm, while there was no peak of gelatin solution (dashed line) at 270 nm. Hence, the phenyl azide group was successfully introduced into gelatin.

(A)



(B)

VEGF amount(ng)	Gelatin amount (μg)	Density 1	Density 2	Density3	AVE	pg/ml	Volume (ml)	Amount in the washing solution (ng)
40	40	0.066	0.070	0.046	0.061	-38.619	5	——
40	20	0.122	0.108	0.184	0.138	72.000	5	0.360
40	10	0.395	0.379	0.379	0.384	423.800	10	4.238
40	4	0.453	0.398	0.425	0.426	482.600	10	4.826
40	2	0.598	0.523	0.566	0.562	678.000	20	13.560
40	0.40	1.037	1.156	1.172	1.122	1477.000	20	29.540
40	0.20	0.724	0.726	0.689	0.713	893.500	40	35.740
40	0.04	0.798	0.777	0.761	0.779	986.900	40	39.476

Figure S2. For quantitative determination of the VEGF concentration in the wash solution, a human VEGF ELISA kit was used. (A) The standard curve of measurement. (B) The calibration of the VEGF amount in the wash solution.

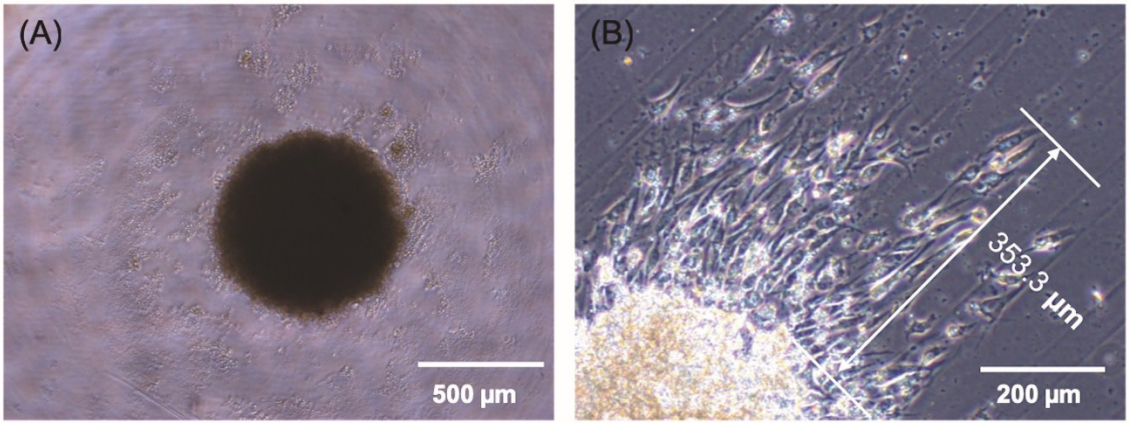


Figure S3. Spheroids sprouting assay. (A) After 5 days of culture in U-bottom plates, the diameter of the spheroids was more than 500 µm. (B) The spheroids were seeded on micropatterned surfaces. After 24 h of culturing, the length of the sprout was measured. The double-head arrow indicates the length of the longest sprout from the spheroid.

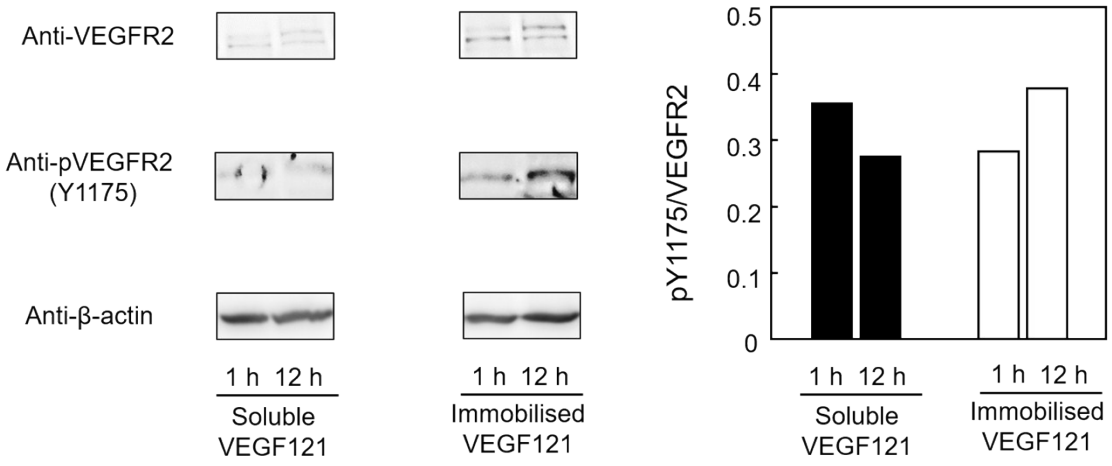


Figure S4. Activation of VEGF receptor 2 (VEGFR2Y1175) on HUVECs. Western blotting of VEGFR2 (220 kDa) and pVEGFR2 (Y1175). β-Actin was used as a loading control. Phosphorylated VEGFR2 induced by soluble or immobilised VEGF at 1 or 12 h of incubation. Band intensity was quantified by the CS analyser software. The results indicated that immobilised VEGF121 continuously stimulated VEGFR2, while soluble VEGF121 decreased its activity.