Lab on a Chip

CORRECTION

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Correction: Introducing dip pen nanolithography as a tool for controlling stem cell behaviour: unlocking the potential of the next generation of smart materials in regenerative medicine

Judith M. Curran,*[a] Robert Stokes,[b] Eleanore Irvine,[b] Duncan Graham,[b] N. A. Amro,[c] R. G. Sanedrin,[c] H. Jamil[c] and John A. Hunt[a]

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Correction for 'Introducing dip pen nanolithography as a tool for controlling stem cell behaviour: unlocking the potential of the next generation of smart materials in regenerative medicine' by Judith M. Curran *et al.*, *Lab Chip*, 2010, **10**, 1662–1670.

The authors regret that errors were made in the construction of Fig. 2 and 3 of this *Lab on a Chip* article. Specifically the annotation associated with the 140 nm and 1 micron arrays was incorrect. The authors would like to clarify that this minor error does not change any of the conclusion or discussion points. The authors further regret that subfigures adapted from ref. 1 were not attributed by citation to ref. 1 and did not contain credit lines in their captions. The figures and captions have now been updated to correct these errors and are given below.

[a] *UKCTE, The Division of Clinical Engineering, School of Clinical Sciences, LINSET, The University of Liverpool, Ground Floor Duncan Building, Daulby Street, Liverpool, UK. E-mail: j.curran@liv.ac.uk; Fax: +44 (0)151 7064915; Tel: Phone: +44 (0)151 7064913*

[b] *Centre for Molecular Nanometrology, WestCHEM, Department of Pure and Applied Chemistry, University of Strathclyde, 295 Cathedral Street, Glasgow, UK. Fax: +44 (0)141 552 0876; Tel: Phone: +44 (0)141 548 4701*

[c] *NanoInk Inc., 8025 Lamon Ave, Skokie, IL, 60077, USA*

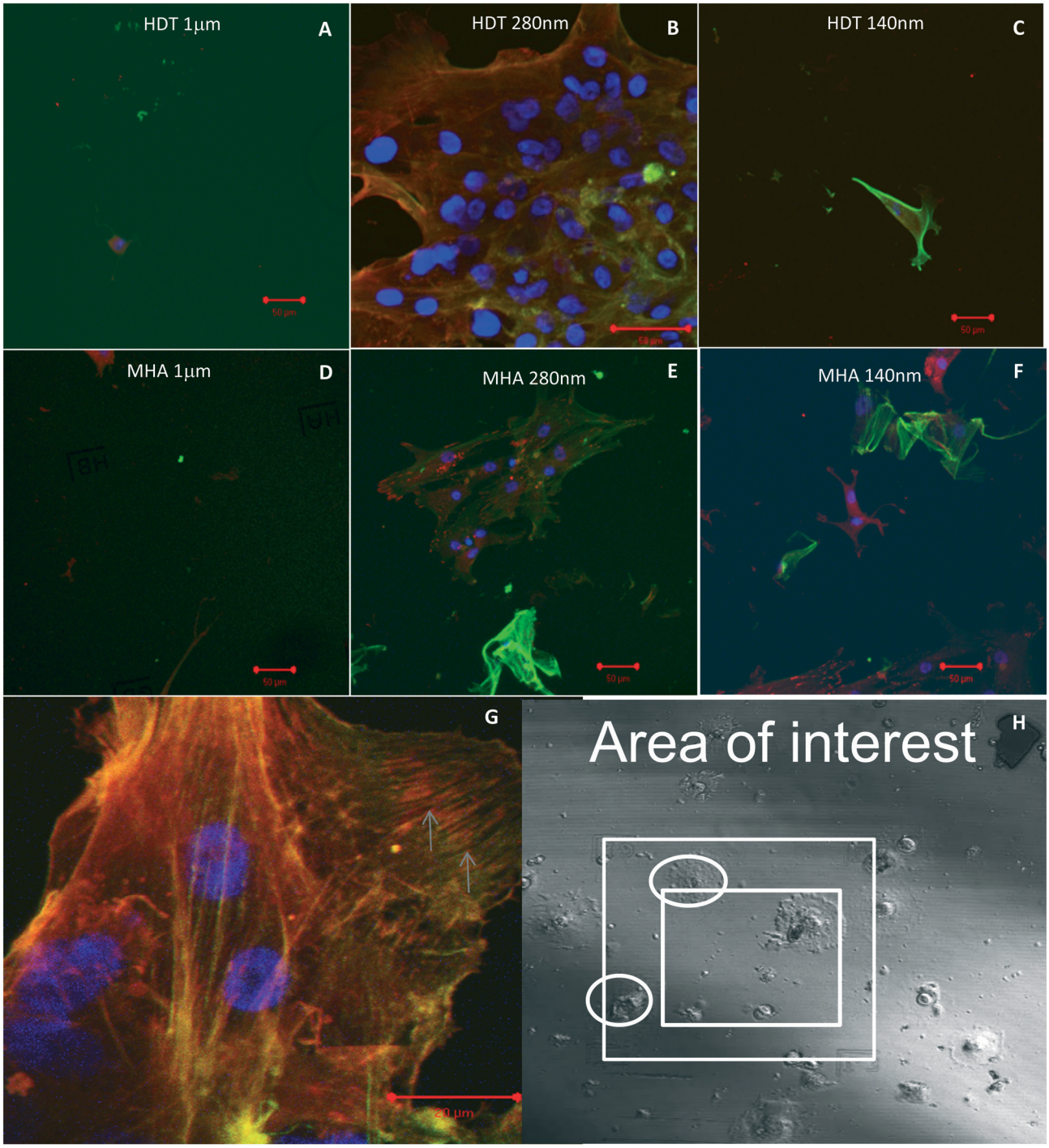

Fig. 2 (A–F) MSC cultured in contact with HDT and MHA modified surfaces for 24 hours and stained with Oregon Green Phallodin (green-stress fibres), vinculin (red-focal contacts) and DAPI (blue-nuclei). Only 280 nm pitch modified surfaces supported viable cell adhesion. (G) High magnification image of cells clustered on ODT 280 nm pitch, arrow heads show motile focal adhesions associated with the periphery of the patterned area, whilst focal adhesions inside the patterned area are dense and well established, depicting the strong binding of the cell *via* focal adhesions to the underlying nanoarrays. (H) Single frame from time lapse microscopy experiment demonstrating the chemotactic nature of the modified surface. Over a 12 hour time period highlighted cells moved from the periphery of the modified area (where bodies were in contact with control and modified areas) into the centre of the modified area (CH3 280 nm pitch, inside the smaller white square) from the adjacent unmodified areas, full time lapse analysis is available in ESI video S1. The images collected were from low cell density experiments to allow investigations into single cell interactions with the surface, the same chemotactic properties were observed when the cell density was increased. Fig. 2A and B are copyright Springer and adapted with permission from ref. 1.

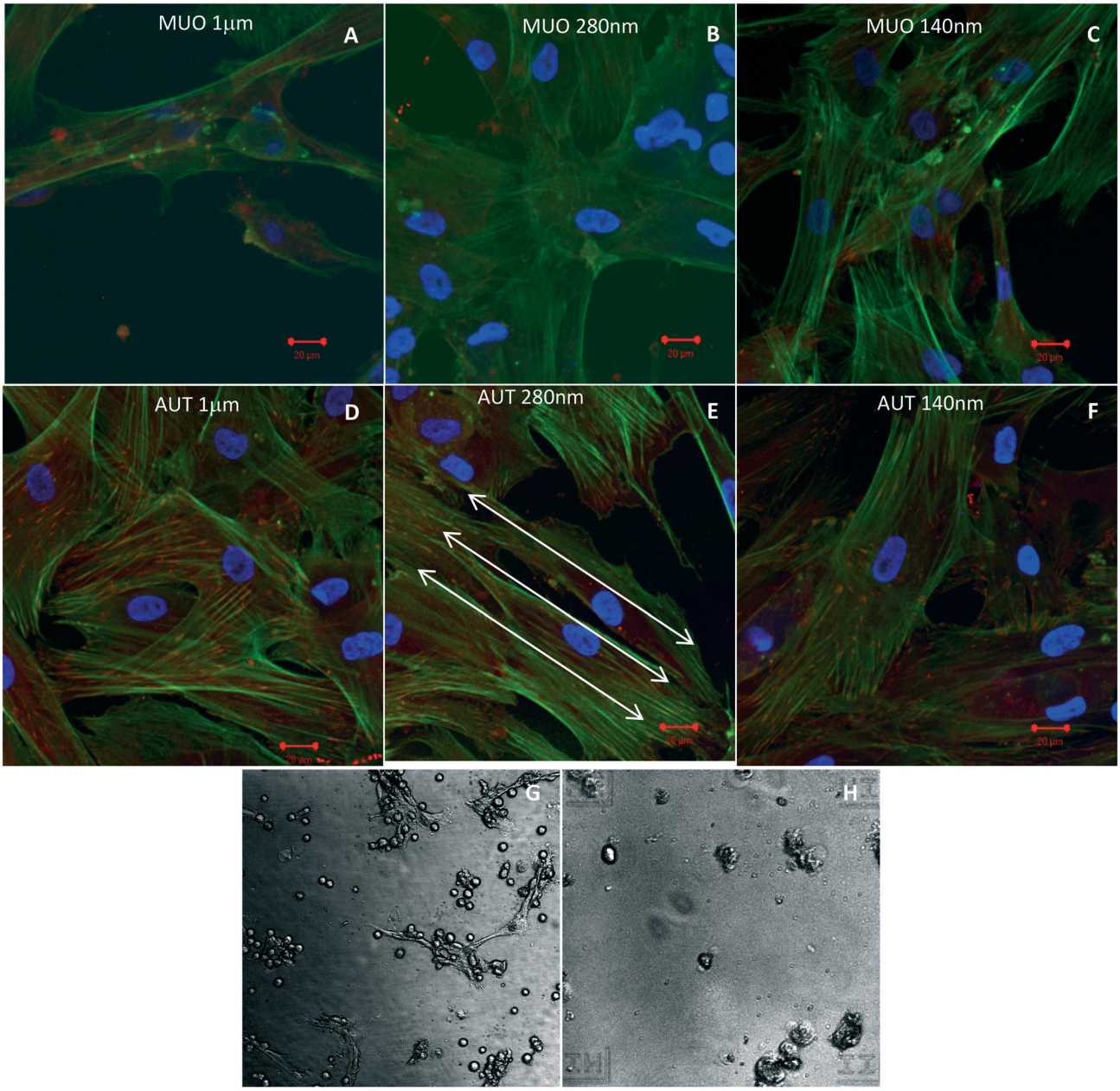

Fig. 3 MSC cultured in contact with MUO (–OH) (A–C) and with AUT ($–NH_2$) (D–H) modified surfaces for 24 hours and stained for F-actin (green), vinculin (red) and cell nuclei (blue). When cultured in contact with 1 μm spaced MUO groups, there was evidence of rounded cell morphology and concentrated clusters of focal adhesions. Cells cultured in contact with 280 nm and 140 nm pitched surfaces showed parallel fibres of F-actin and an elongated cell morphology with minimal focal contact formation. There was also evidence of concentrated buds of actin on these surfaces (examples of this phenomenon are highlighted by arrow heads). When MSC were cultured in contact with $–NH_2$ modified (D and F) surfaces for 24 hours cells were elongated and aligned when cultured in contact with 280 nm pitch surfaces (E), cells in the upper right and left corners are at the outer extremities of the patterned area, therefore show signs of polarisation but are not as strong as cells in the centre of the pattern where the entirety of the cell body receives the same stimulus. Time lapse microscopy (G and H) confirmed the $–NH_2$ 280 nm pitch surfaces ability to induce elongation. (G) Single frame from 280 nm pitch $–NH_2$, all of the field of view is patterned with $–NH_2$, there is clear evidence of cell clustering and elongation of the well attached cell clusters, single frame taken from ESI video S2. When the pitch was increased by 100 nm (H) the effect on cell adhesion and morphology was significant, at a pitch of 395 nm the cells could not attach properly or elongate and resulted in rounded poorly attached cells, the area of modification is located within the four marker points, double letters contained within a square bracket, located at the corners of the field of view, single frame taken from ESI video S3. Fig. 3(D and E) are copyright Springer and adapted with permission from ref. 1.

The Royal Society of Chemistry apologises for these errors and any consequent inconvenience to authors and readers.

References

1 J. M. Curran, R. Chen, R. Stokes, E. Irvine, D. Graham, E. Gubbins, D. Delaney, N. Amro, R. Sanedrin, H. Jamil and J. A. Hunt, *J. Mater. Sci.: Mater. Med.*, 2010, **21**, 1021–1029.

