Supplementary Material (ESI) for *Lab on a Chip*

Engineering of a microfluidic cell culture platform embedded with nanoscale features

Yong Yang,[a] Karina Kulangara,[a] Jaren Sia,[a] Lu Wang[b] and Kam W. Leong*[a]

[a] *Department of Biomedical Engineering, Duke University, Durham, NC 27708; E-mail: kam.leong@duke.edu*
[b] *Duke Human Vaccine Institute, Duke University, Durham, NC 27710*

Supplementary Movie S1 hMSCs migrated preferentially along the nanogratings which were perpendicular to the direction of flow at a rate of 267 μm/s (shear stress: 0.03 N/m^2). The cells were allowed to adhere to the surface for 24 hrs before the flow was initiated. The playing speed of the video is 3000 times of real time.

Supplementary Movie S2 hMSCs migrated randomly on flat surface in a microfluidic platform. The cells were allowed to adhere to the surface for 24 hrs and a flow of 267 μm/s (shear stress: 0.03 N/m^2) was initiated. The playing speed of the video is 3000 times of real time