



**Supplementary Movie SV1.** MC3T3 cell migration on different platforms over 16 h with 5 min/frame. (a) Flat, (b) nanoholes, (c) nanopillars, (d) grating, (e) grating with nanoholes, (f) grating with nanopillars. Movies were 20X faster. Depth of nanohole was 250 nm and height of nanopillar was 250 nm.