

Supplementary Information

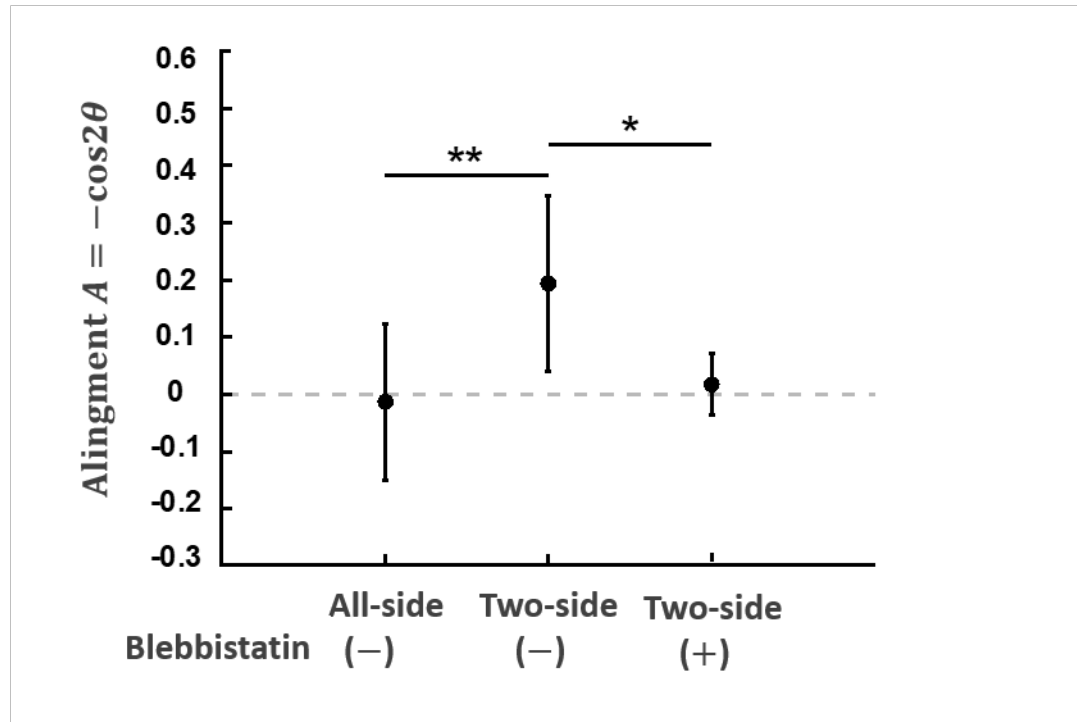
Uniaxially-fixed mechanical boundary condition in collagen matrix elicits cellular alignment with induction of osteogenesis

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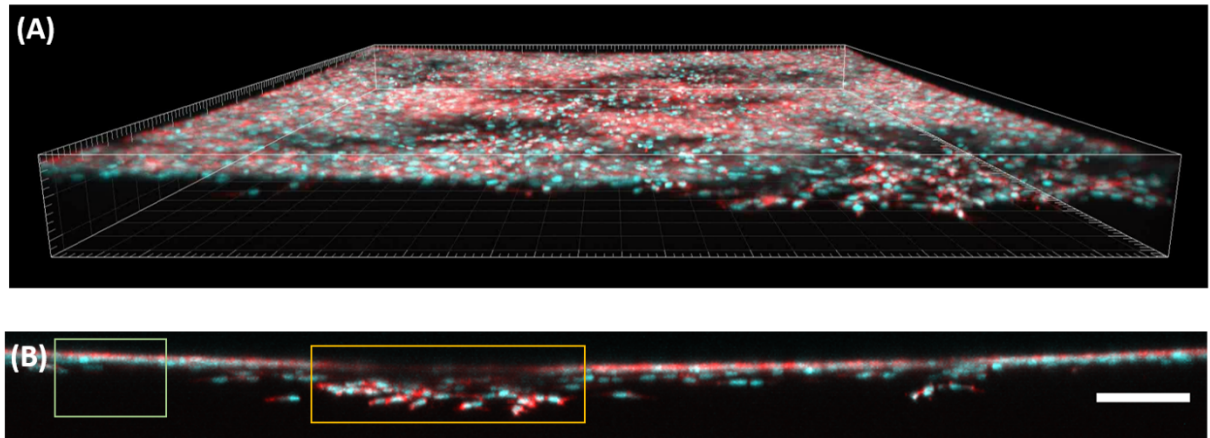
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Supplementary Figure 1. Order parameter A used for quantification of the ratio of cellular alignment after 1 d incubation in the all-way fixed matrix, 2-way fixed matrix, and 2-way fixed matrix in the presence of blebbistatin. We plotted the order parameter A defined as; $A = -\cos 2\theta$ (perpendicular = -1, random = 0, parallel = 1). Plots represent the mean $\pm$ standard deviation ($n = 8$; p-value was calculated using ANOVA followed by Tukey-Kramer post-hoc test; * $p < 0.05$, ** $p < 0.01$).



Supplementary Figure 2. Heterogeneity in cell migratory behavior in the 2-side fixed matrix. (A) Bird's-eye view and (B) vertical-section view of DAPI and ACTIN staining images of the cellular morphology for sub-cultured cells in the 2-side fixed matrix after 10 d incubation. Scale bar = 100 μm

Supplementary Movie 1. Heterogeneity in cell migratory behavior in the 2-side fixed matrix. Image of DAPI and ACTIN staining of cells sub-cultured in the 2-side fixed matrix after 10 d incubation.