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Comprehensive study on cellular morphologies, proliferation, motility, and epithelial–mesenchymal transition of breast cancer cells incubated on electrospun polymeric fiber substrates

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Supplementary data: Figures S1, S2, S3, and Tables S1, and S2

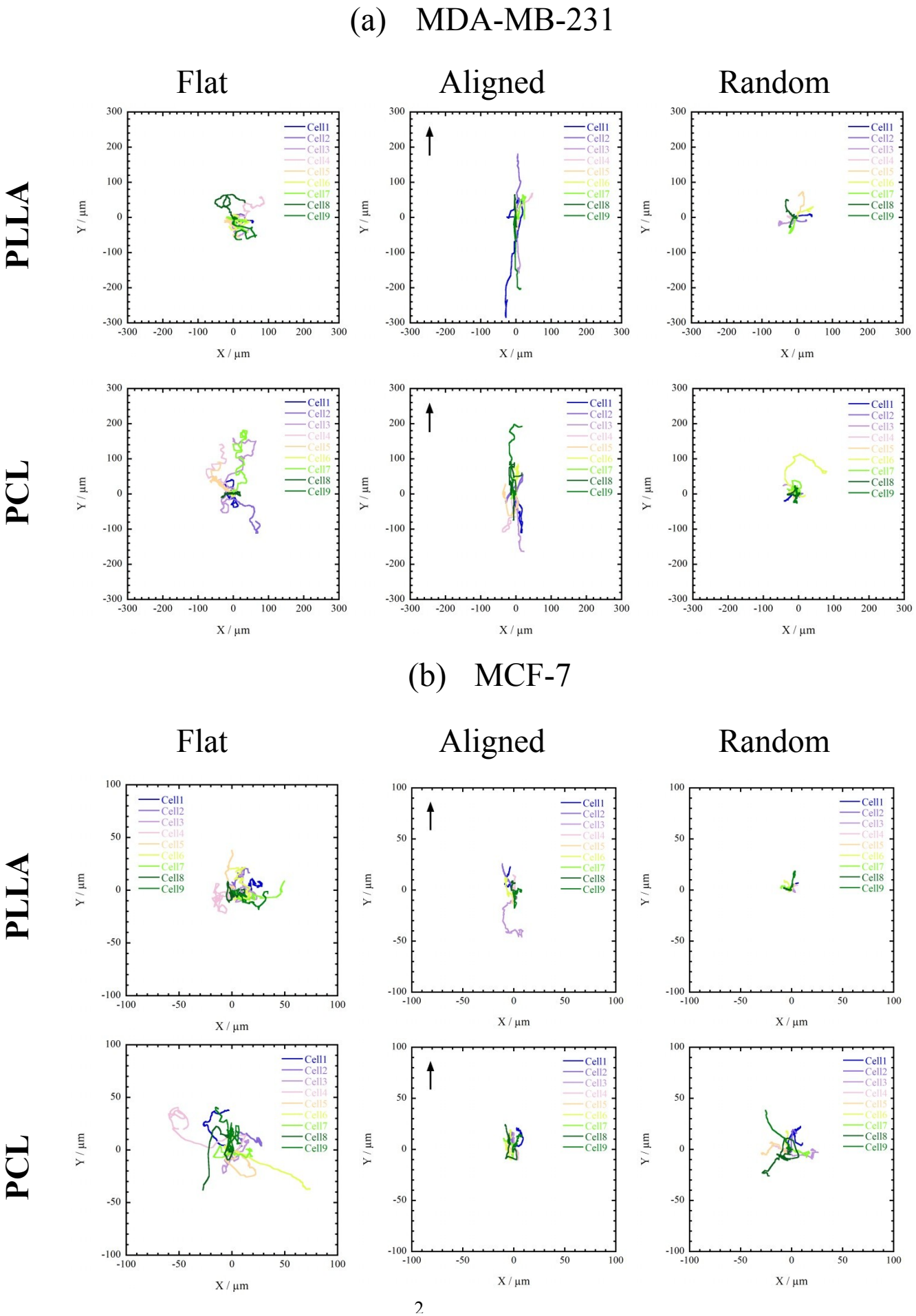

Fig. S1. Representative trajectory of cells cultured on six different substrates for 3 day: (a) MDA-MB-231 and (b) MCF-7. Arrows indicate the aligned fiber direction of the substrate.

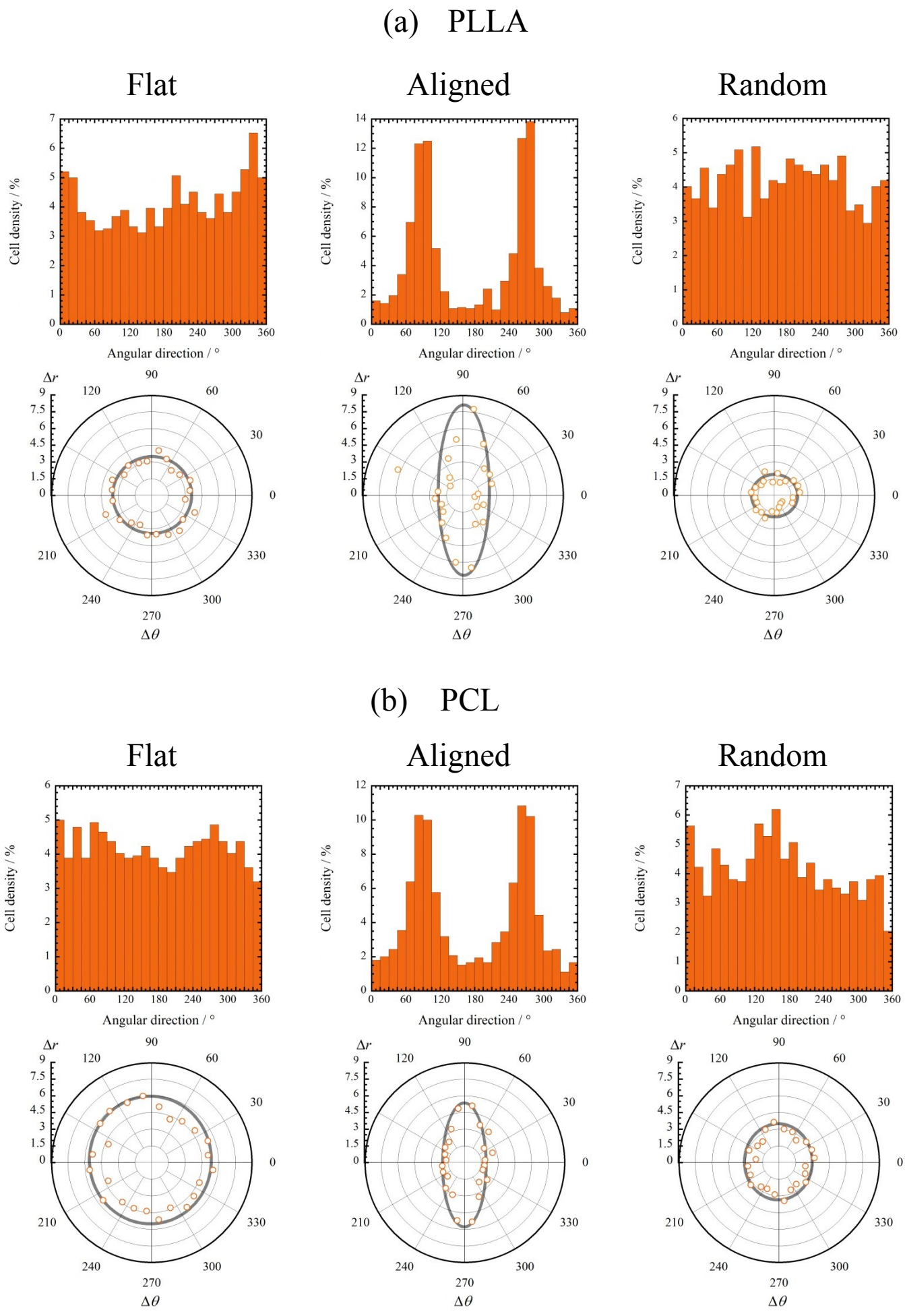

Fig. S2. Polar coordinate plots of the calculated Δr (x, y) and $\Delta\theta$ (x, y) (Lower panels) and percentage cell density vs. azimuthal angular distribution of the polar coordinate (Top panels) for MDA-MB-231 cells cultured on (a) PLLA and (b) PCL substrates for 3 day.

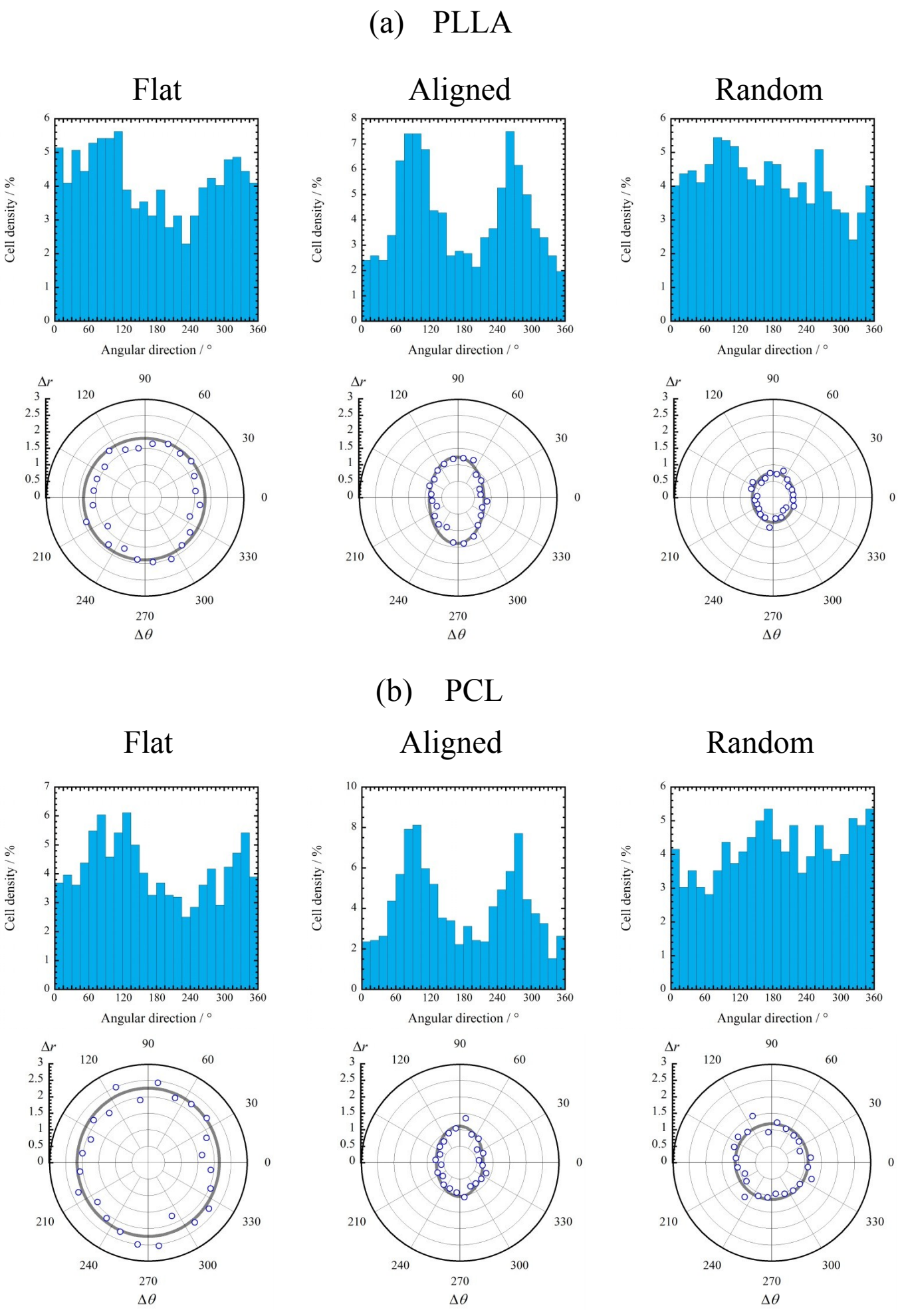

Fig. S3. Polar coordinate plots of the calculated Δr (x, y) and $\Delta\theta$ (x, y) (Lower panels) and percentage cell density vs. azimuthal angular distribution of the polar coordinate (Top panels) for MCF-7 cells cultured on (a) PLLA and (b) PCL substrates for 3 day.

Table S1. Summary of cellular migration speed (*S*) persistent time (*P*), and cellular diffusivity (*D*) of MDA-MB-231 cells at day 1 and day 3 cultured on six different substrates.

Material		substrate	*S* (μm/min)	*P* (min)	R^2	*D* (μm^2/min)
PLLA	Day 1	Flat	0.531	15.08	0.996	2.12
		Aligned	0.343	36.13	0.997	2.13
		Random	0.217	28.48	0.997	0.67
	Day 3	Flat	0.254	43.37	0.997	1.40
		Aligned	0.418	66.47	0.999	5.82
		Random	0.155	48.99	0.997	0.58
PCL	Day 1	Flat	0.661	13.55	0.997	2.96
		Aligned	0.328	63.96	0.998	3.45
		Random	0.195	78.91	0.998	1.50
	Day 3	Flat	0.337	62.92	0.998	3.58
		Aligned	0.459	12.38	0.997	1.30
		Random	0.290	15.42	0.997	0.65

Table S2. Summary of cellular migration speed (*S*) persistent time (*P*), and cellular diffusivity (*D*) of MCF-7 cells at day 1 and day 3 cultured on six different substrates.

Material		substrate	*S* (μm/min)	*P* (min)	R^2	*D* (μm^2/min)
PLLA	Day 1	Flat	0.514	1.41	0.997	0.19
		Aligned	0.290	2.65	0.996	0.11
		Random	0.373	0.58	0.999	0.04
	Day 3	Flat	0.181	8.73	0.996	0.14
		Aligned	0.054	75.16	0.998	0.11
		Random	0.060	11.24	0.996	0.02
PCL	Day 1	Flat	0.306	6.57	0.996	0.31
		Aligned	0.080	13.10	0.996	0.04
		Random	0.077	15.74	0.996	0.05
	Day 3	Flat	0.177	21.68	0.997	0.34
		Aligned	0.057	34.47	0.997	0.06
		Random	0.125	12.84	0.997	0.10