Electronic Supplementary Material (ESI) for Integrative Biology.

SUPPLEMENTARY DATA

SUPPLEMENTARY FIGURES

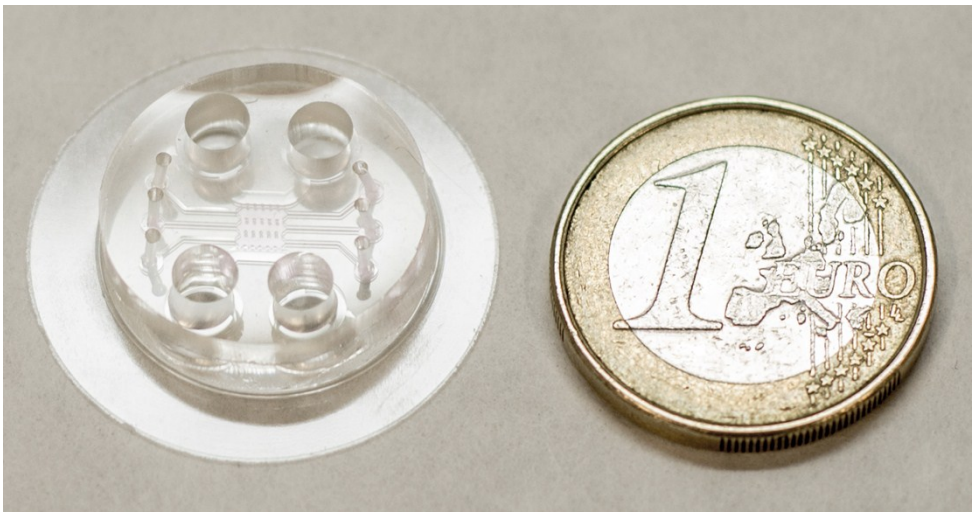

Figure S1. Picture of the microdevice next to a coin.

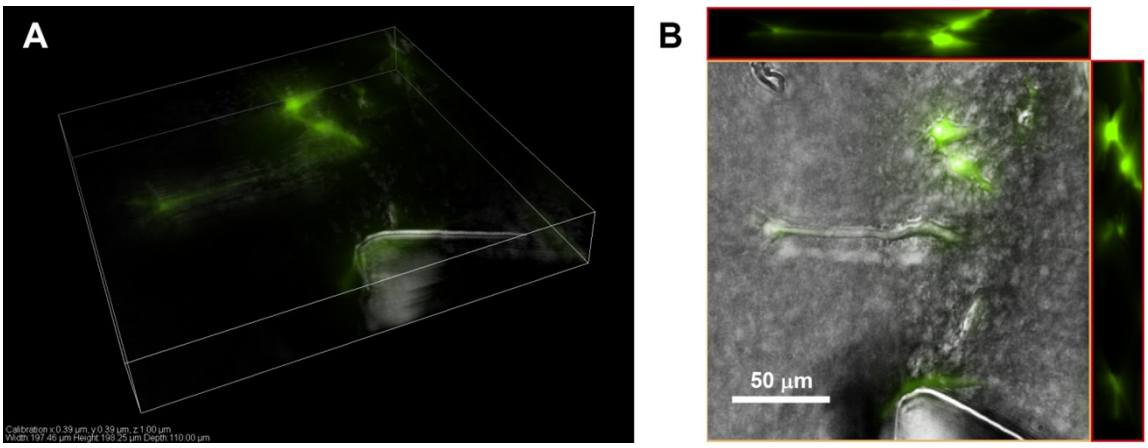

Figure S2. Cells migrating through the interface from 1.5mg/ml to 2mg/ml collagen hydrogels. A) 3D reconstruction. B) Top view and orthogonal projections.

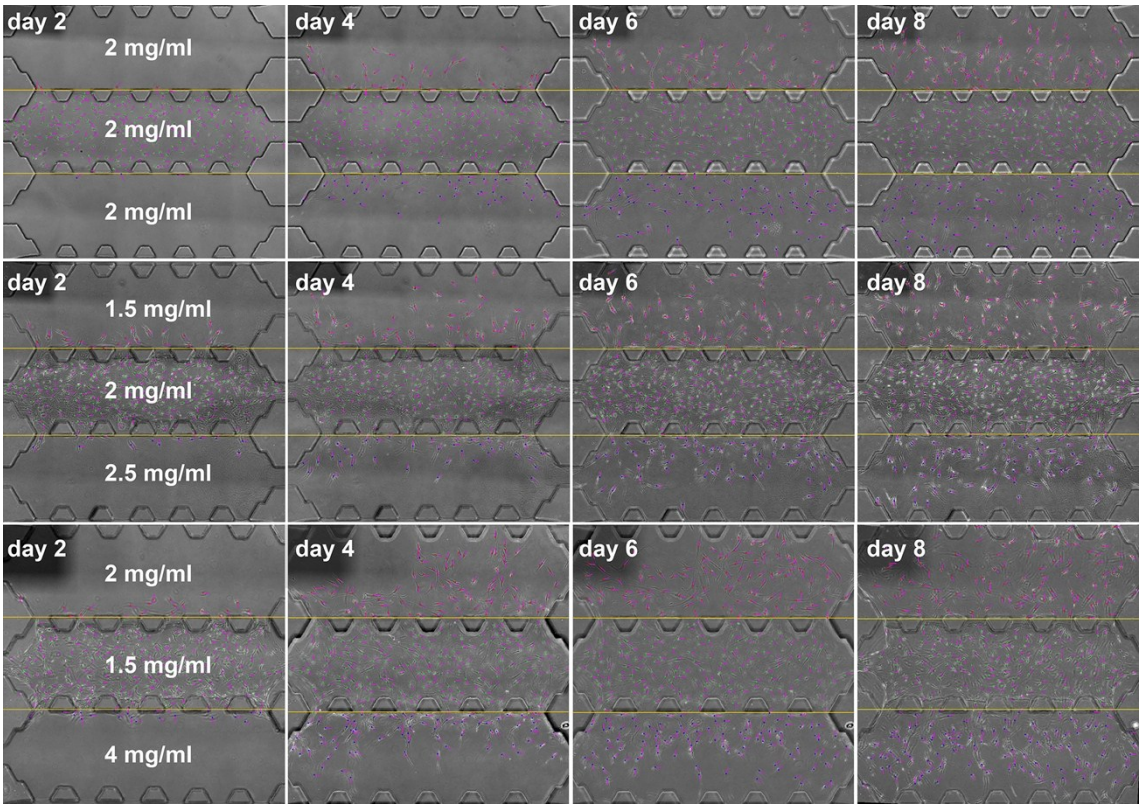

Figure S3. Tiled view of cell distribution at day 2,4,6 and 8 for different collagen concentration distributions

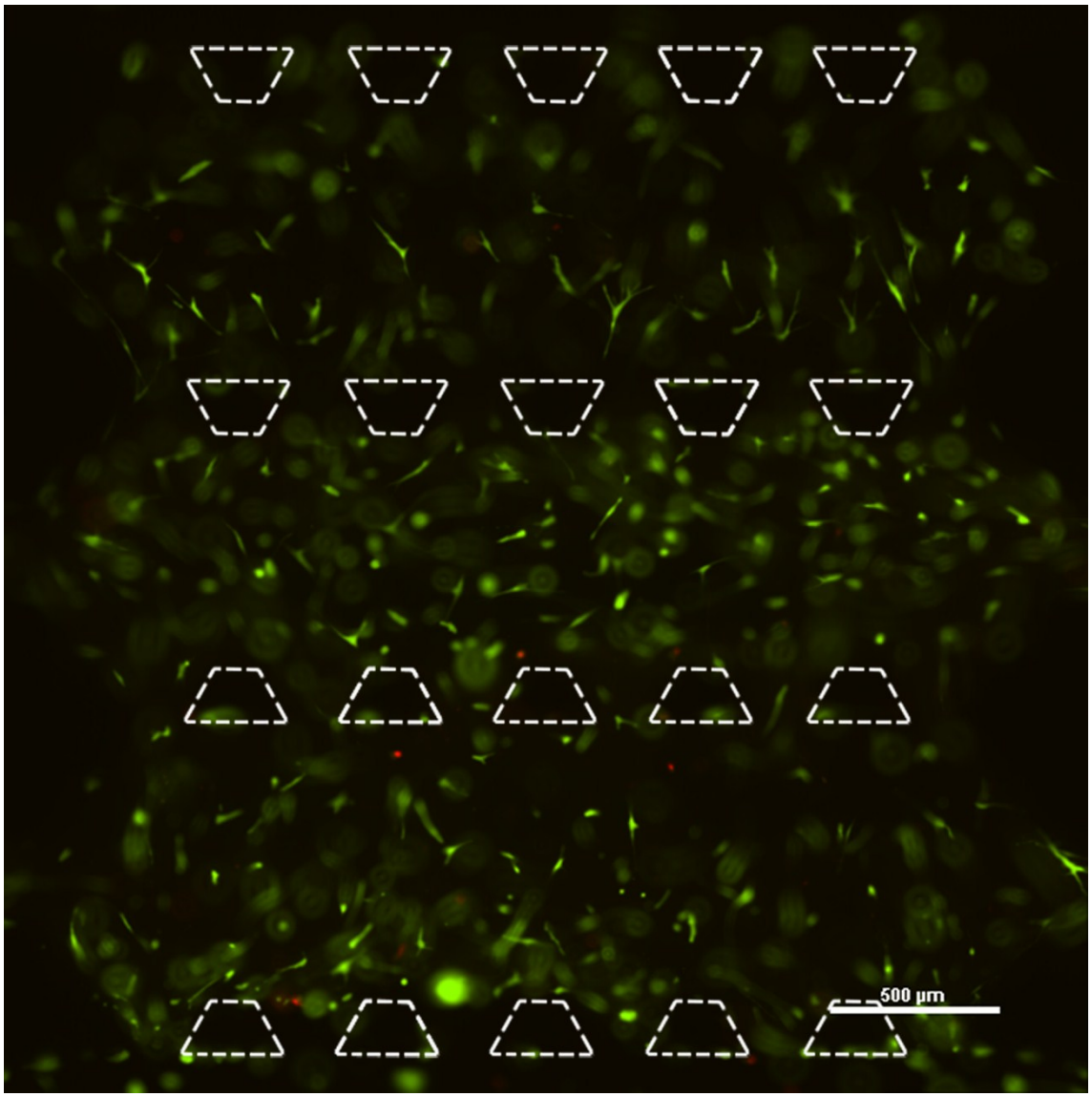

Figure S4. Fluorescence image of NHDF-GFP cells stained with Live/Dead Cytotoxicity Assay Kit at day 8 of culture. Viable cells are shown in green whereas dead cells are in red. Image was captured using a Nikon D-Eclipse C1 equipped with a CFI PL 10X AN 0,3 WD 16mm objective.

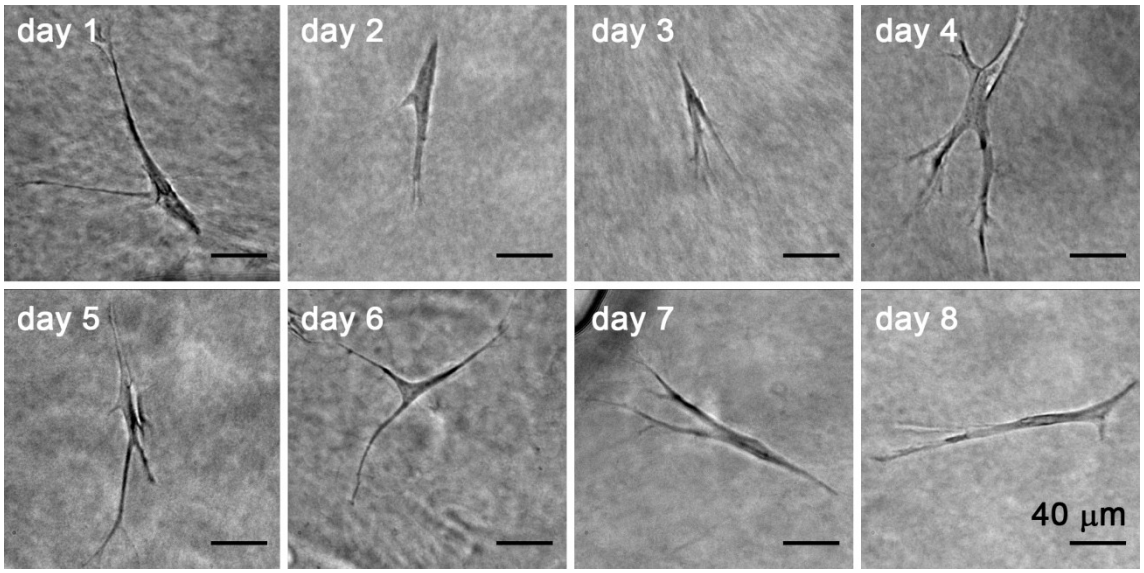

Figure S5. Fibroblast morphology along the experiment in 3D collagen matrices. Cells were imaged using phase-contrast microscopy with a 40X objective. Scale bar represents 40µm.

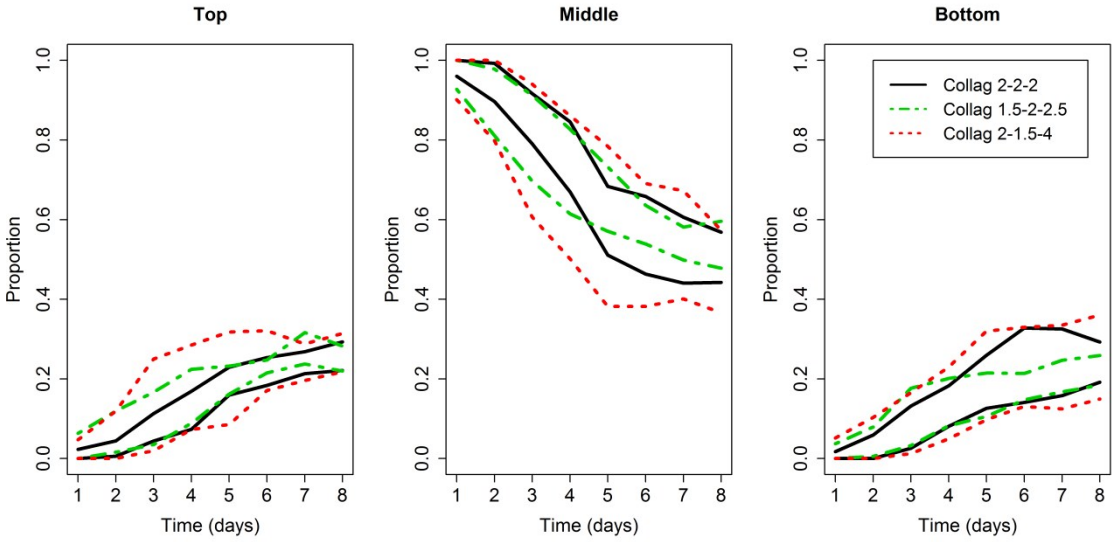

Figure S6. Observed limits of the proportion of cells in each zone along time for the control case ([GF] = 0) of each assay.

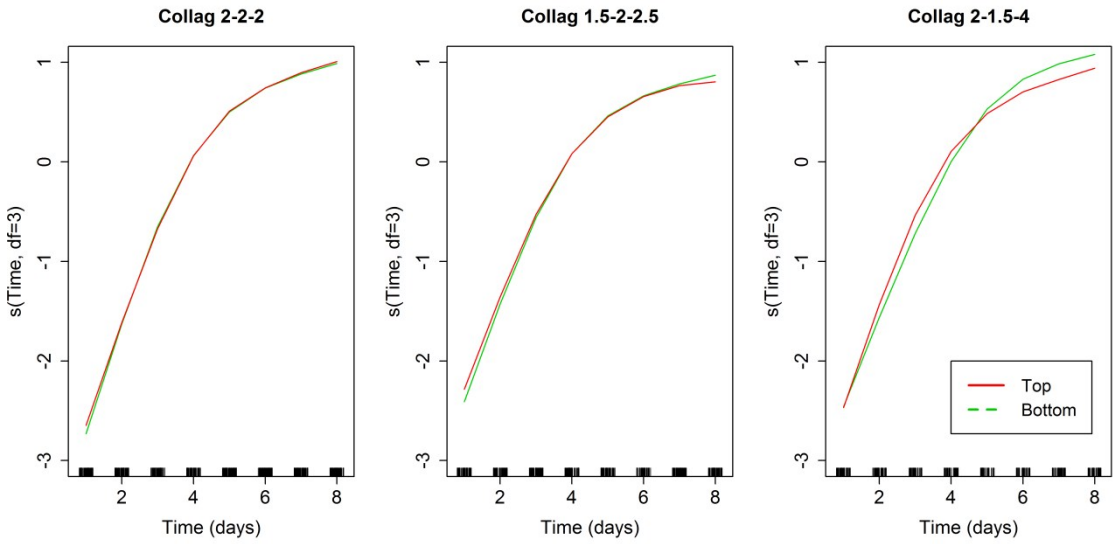

Figure S7: GAM model for cell proportion in top and bottom zones. Effect of the smoother in Time as the linear predictor of a logistic multinomial model for control experiments of each assay

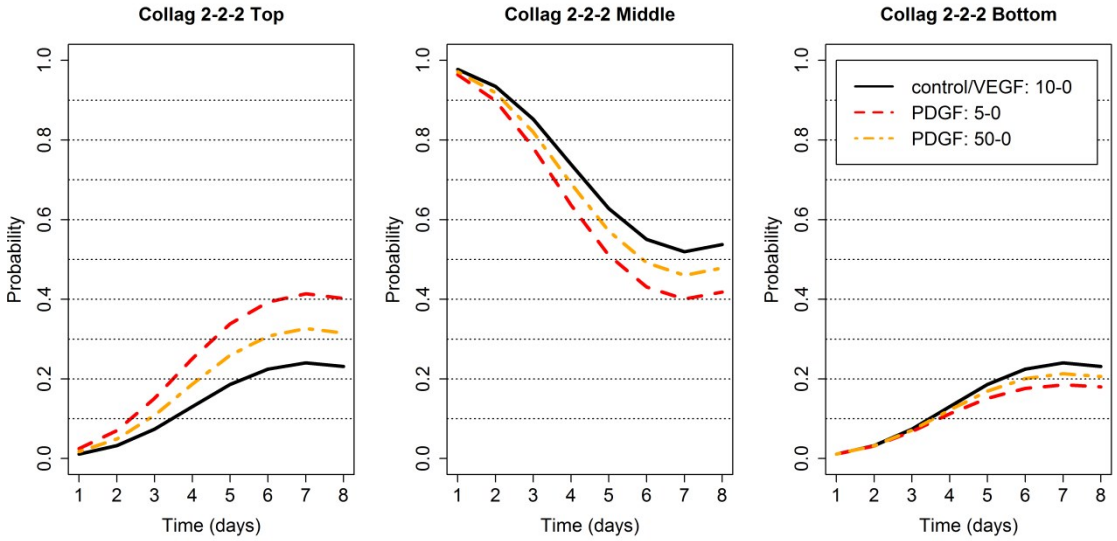

Figure S8: Logistic multinomial model for assay 1. Expected proportion of cells evolution in every zone.

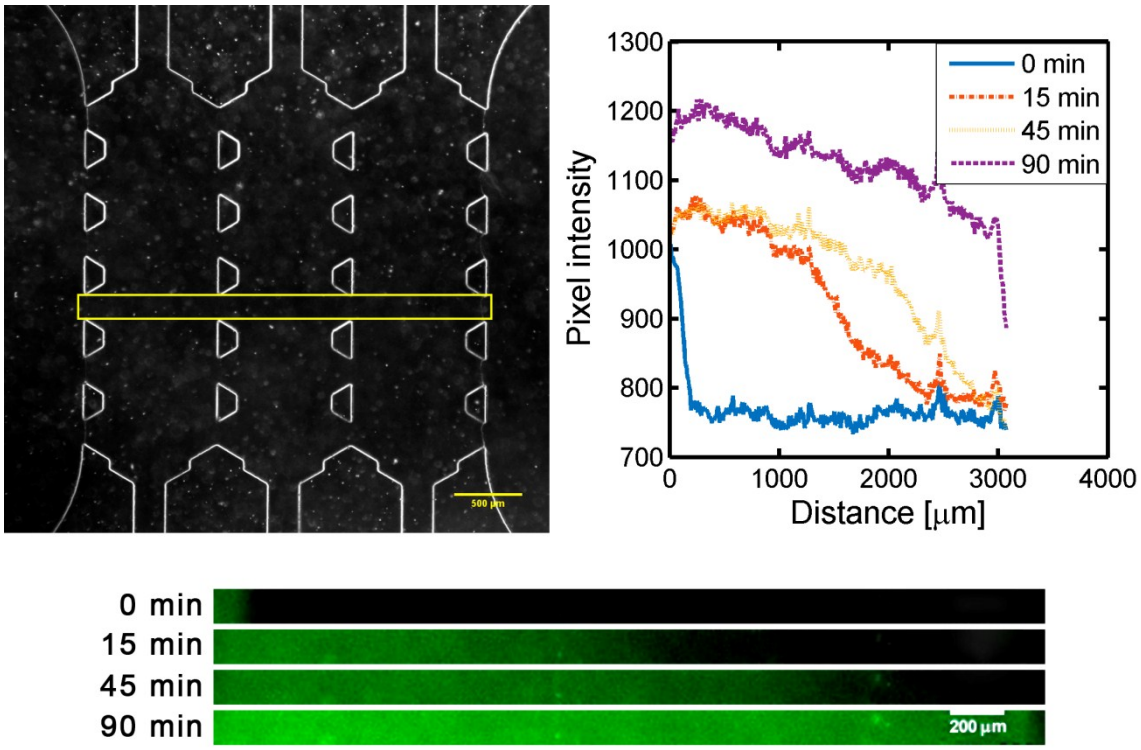

Figure S9. Diffusion profile of FITC-dextran molecule (20KDa) across the chamber during the first 90 minutes. Images were captured with a 2X objective every 500 milliseconds for 3 hours. Yellow rectangle highlights the measured area.

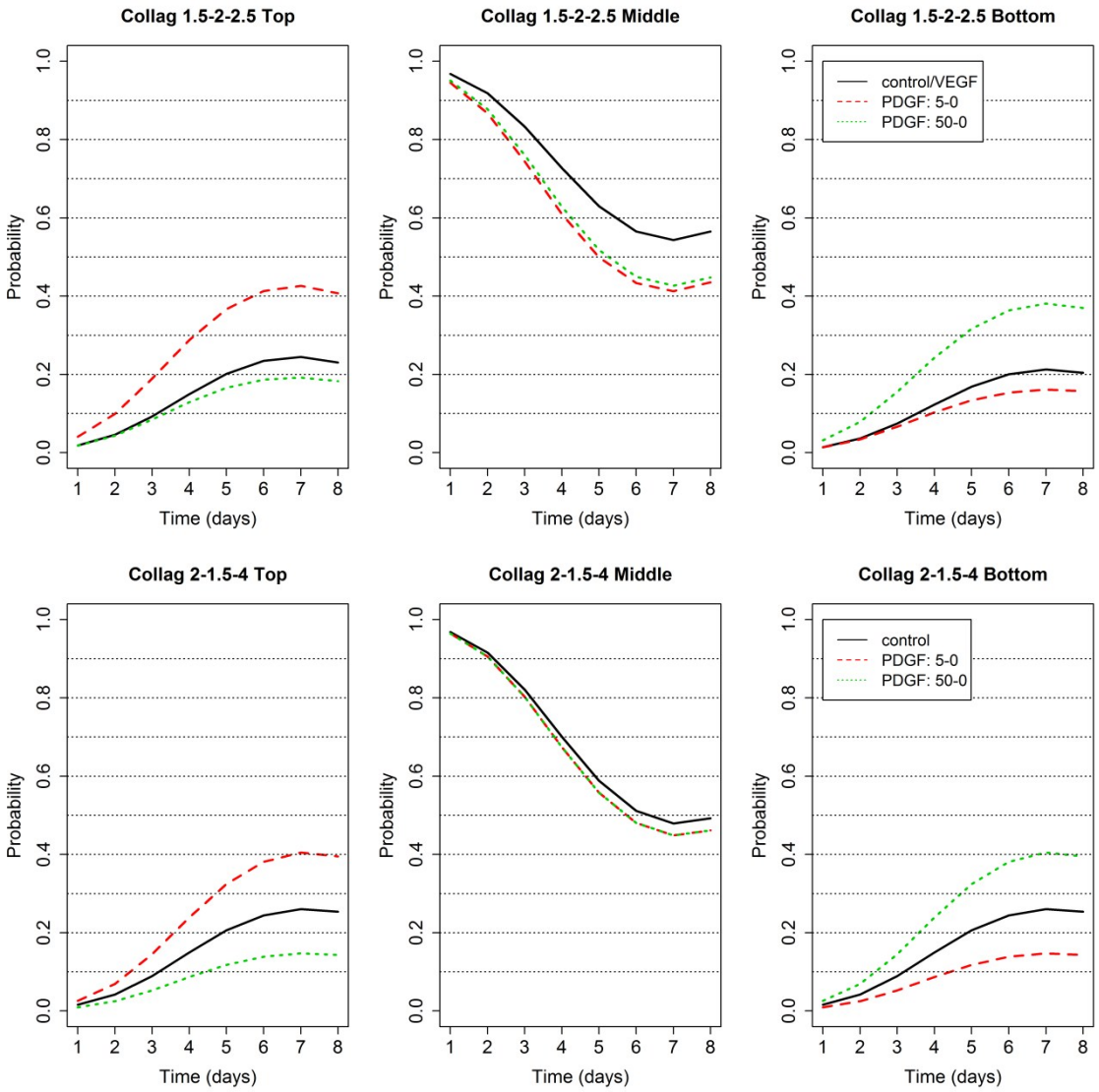

Figure S10: Logistic multinomial model for assays 2 (first row) and 3 (second row). Expected proportion of cells evolution in every zone.

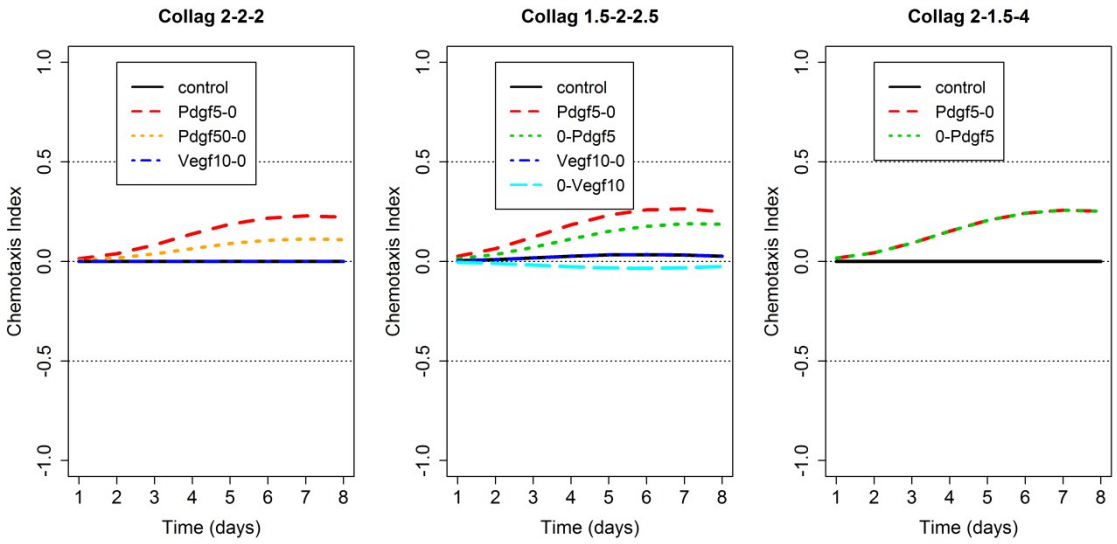

Figure S11: Chemotactic index evolution for all the studied cases

SUPPLEMENTARY TABLES

Terms	Estimate p_1	p-value	Estimate p_3
Intercept	-5.13	0	-5.13
t	1.21	0	1.21
t^2	-0.0835	0.002	-0.0835

Table S1: Multinomial logistic regression model parameters for the control conditions of each assay. p-values corresponding to the Wald Test.

Terms	Estimate p_1	p-value	Estimate p_3
Intercept	-5.76	0	-5.76
t	1.4	0	1.4
t^2	-0.0981	0	-0.0981
$[PDGF]_{Z1}$ (linear term)	0.178	0	0
$[PDGF]_{Z1}^2$ (quadratic term)	-0.00338	0	0

Table S2: Multinomial logistic regression model parameters for assay 1 (collagen concentration 2-2-2). p-values corresponding to the Wald Test.

Terms	Estimate p_1	p-value	Estimate p_3	p-value
Intercept	-5.14	0	-5.41	0
t	1.25	0	1.27	0
t^2	-0.0898	0.001	-0.0898	0.002
$[PDGF]_{Z1}$	0.166	0	0	-
$[PDGF]_{Z3}$	0	-	0.165	0

Table S3: Multinomial logistic regression model parameters for assay 2 (collagen concentration 1.5-2-2.5). p-values corresponding to the Wald Test.

Terms	Estimate p_1	p-value	Estimate p_3
Intercept	-5.34	0	-5.34
t	1.31	0	1.31
t^2	-0.0911	0.003	-0.0911
$[PDGF]_{Z1}$ - $[PDGF]_{Z3}$	0.101	0	-0.101

Table S4: Multinomial logistic regression model parameters for assay 3 (collagen concentration 2-1.5-4). p-values corresponding to the Wald Test.