

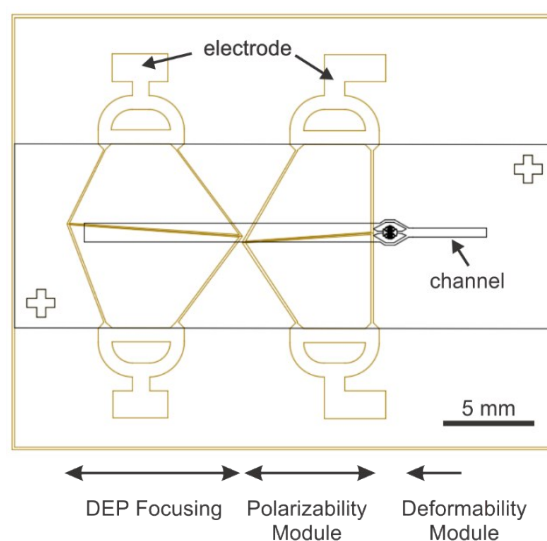
## Multiparameter cell-tracking intrinsic cytometry for single-cell characterization

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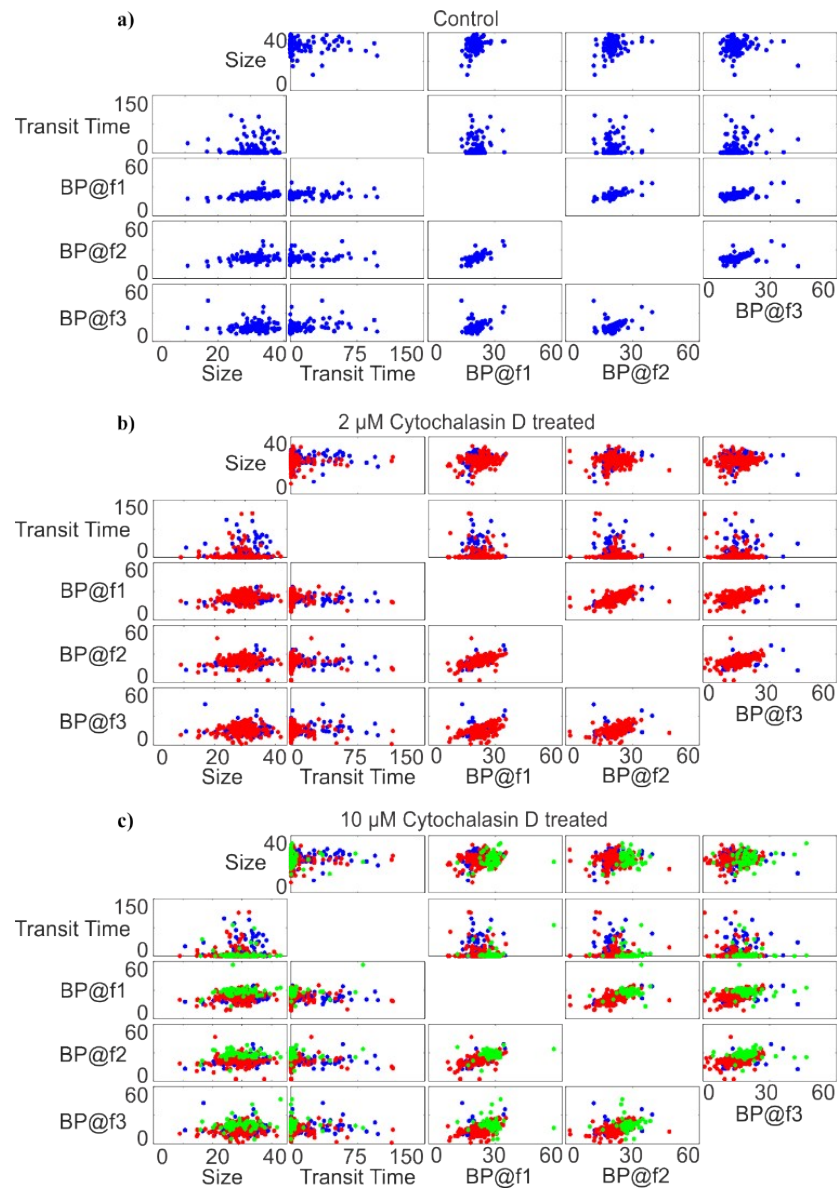
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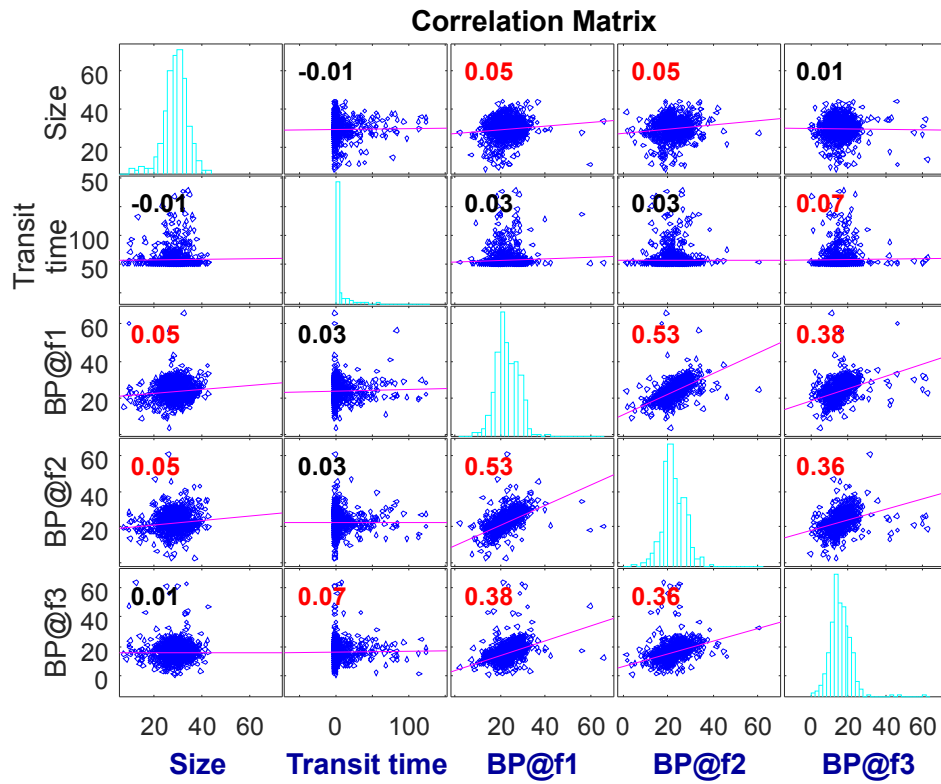
### Supplementary Material



**Supplementary Figure S1.** Device design. The device contains one inlet, DEP focusing, polarizability module, deformability module, and one outlet. The device footprint is  $\sim 29.27$  mm (L)  $\times$  23.28 mm (W). The polarizability module footprint, including the channel, electrodes, and the electrode contact pads, is  $\sim 7.07$  mm (L)  $\times$  19.75 mm (W). The deformability module footprint is  $\sim 1.92$  mm (L)  $\times$  1.35 mm (W).



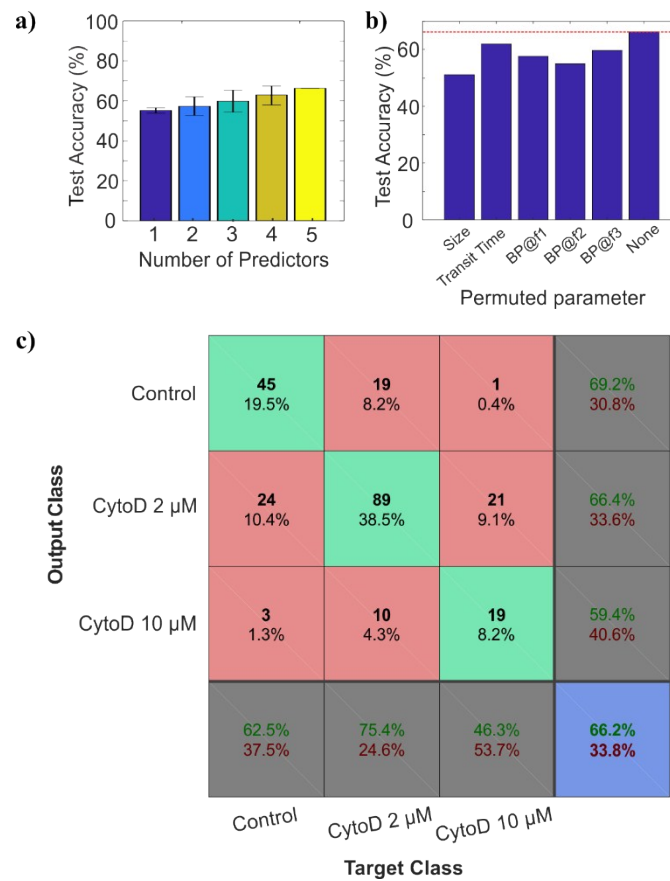
**Supplementary Figure S2.** Scatter plots of the five intrinsic markers measured by the integrated platform for a) control population (blue), b) 2  $\mu$ M Cytochalasin D treated population (red), and c) 10  $\mu$ M Cytochalasin D treated population (green).



**Supplementary Figure S3.** Matrix of plots showing correlation among pairs of markers in the measured multiparameter single-cell data. The correlation coefficients as well as the slopes of the corresponding least-square reference lines are displayed in the plots. Histograms of markers are shown along the matrix diagonal.

Output Class	Control	45 19.5%	15 6.5%	1 0.4%	73.8% 26.2%
	CytoD 2 $\mu$ M	23 10.0%	91 39.4%	11 4.8%	72.8% 27.2%
	CytoD 10 $\mu$ M	4 1.7%	12 5.2%	29 12.6%	64.4% 35.6%
		62.5% 37.5%	77.1% 22.9%	70.7% 29.3%	71.4% 28.6%
		Control	CytoD 2 $\mu$ M	CytoD 10 $\mu$ M	
		Target Class			

**Supplementary Figure S4.** Confusion matrix describing the performance of the random forest classifier with all 5 intrinsic markers on the test data set. Green and red boxes represent the total number and the proportion of accurate and inaccurate classifier outputs corresponding to target classes, respectively. The blue-colored box represent the overall classification accuracy of the model.



**Supplementary Figure S5.** a) Classification accuracy by the SVM classifiers on the test data set as the number of predictors used increases. b) Impact of each parameter on the classification accuracy of the SVM model. Classification accuracy as the values of each parameter are permuted. c) confusion matrix describing the performance of the SVM model with all 5 intrinsic markers on the test data set.