Figure S1: Training of the ConvNet model. (a) Training accuracy of the RPN for cell number prediction and bounding box regression. (b) Training accuracy of the SCN for sensor identity prediction.
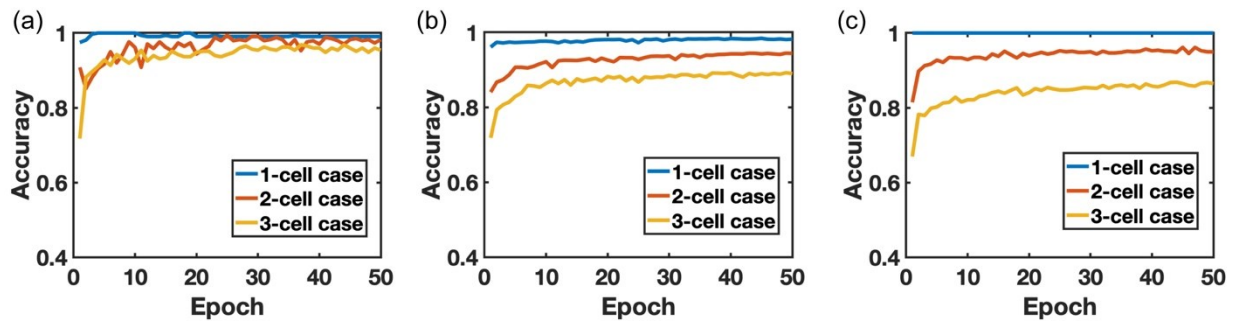
Figure S2: Validation of the ConvNet model through the validation dataset. (a) Accuracy of the RPN for cell number prediction given sensor waveforms with a different number of contained signature waveforms. The accuracies of cell number predictions for 1-cell, 2-cell, and 3-cell cases are 100%, 97%, and 94%, respectively. (b) Accuracy of the RPN for bounding box regression. The accuracies of bounding box regressions for 1-cell, 2-cell, and 3-cell cases are 97%, 93%, and 88%, respectively. (c) Accuracy of the SCN for sensor identity prediction. The accuracies of sensor identity predictions for 1-cell, 2-cell, and 3-cell cases are 100%, 93%, and 85%, respectively.
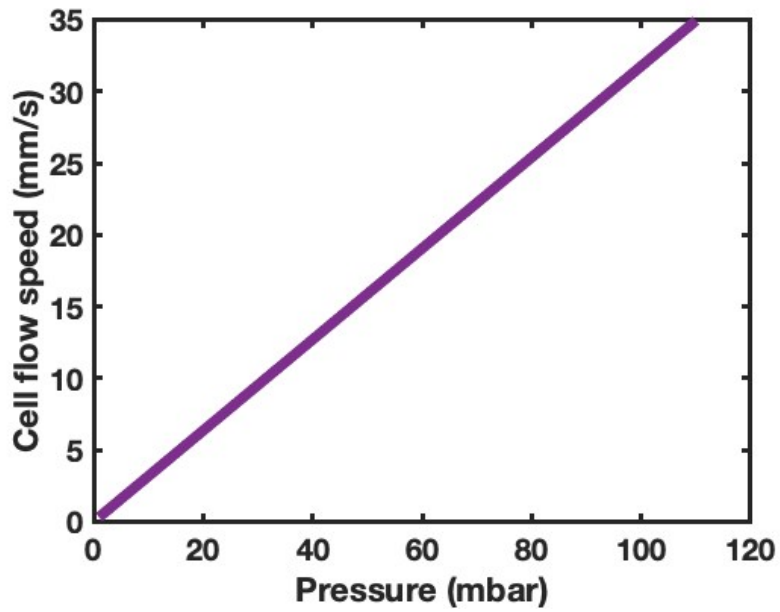
Figure S3: Experimentally observed relation between the driving pressure and the cell flow speed for the microfluidic device used in the study.