

*Electronic Supplementary Information (ESI)*

# **Enhanced Motility and Interaction of Nasopharyngeal Carcinoma with Epithelial Cells in Confined Microwells**

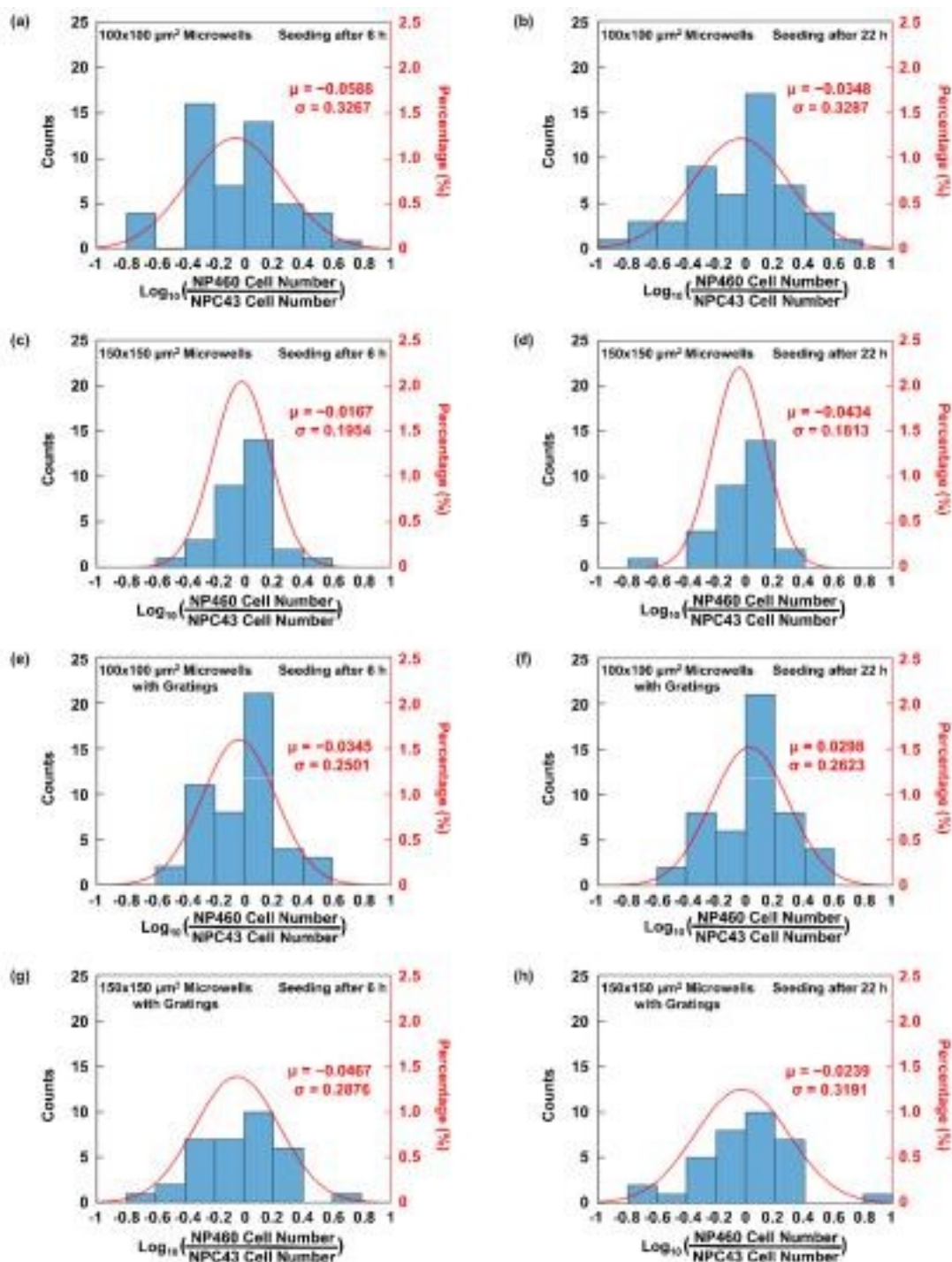
Xiao Hong,<sup>a†</sup> Yuanhao Xu,<sup>a†</sup> and Stella W. Pang<sup>a\*</sup>

<sup>a</sup>Department of Electrical Engineering and Centre for Biosystems, Neuroscience, and  
Nanotechnology, City University of Hong Kong, Kowloon, Hong Kong, China

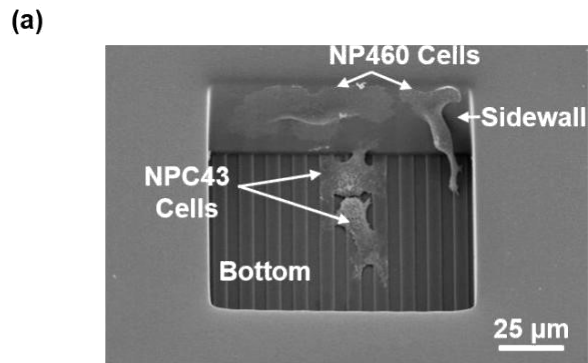
<sup>†</sup> These authors contributed equally

<sup>\*</sup> Corresponding Author: pang@cityu.edu.hk

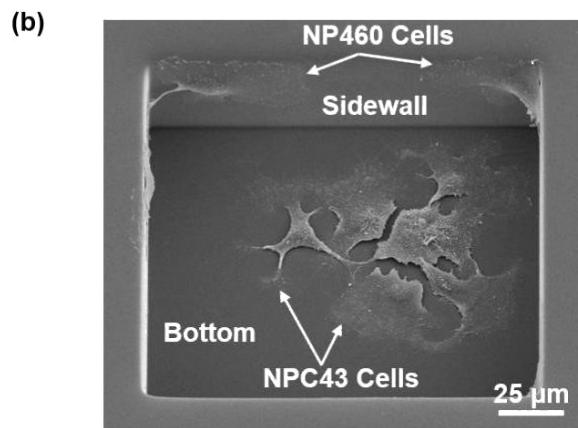
## Supplementary Figures



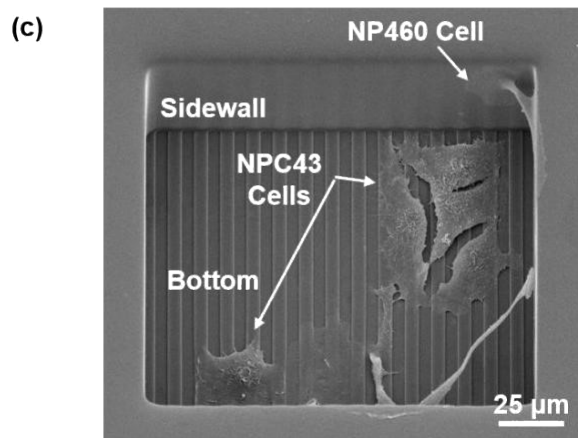
**Supplementary Figure S1.** Ratio between NP460 and NPC43 cell number in (a-b) 100x100  $\mu\text{m}^2$  microwells, (c-d) 150x150  $\mu\text{m}^2$  microwells, (e-f) 100x100  $\mu\text{m}^2$  microwells with gratings, and (g-h) 150x150  $\mu\text{m}^2$  microwells with gratings after seeding for 6 and 22 h.  $\mu$  is expectation of Gaussian distribution and  $\sigma$  is standard deviation.



**100x100  $\mu\text{m}^2$  Microwells  
with Grating**

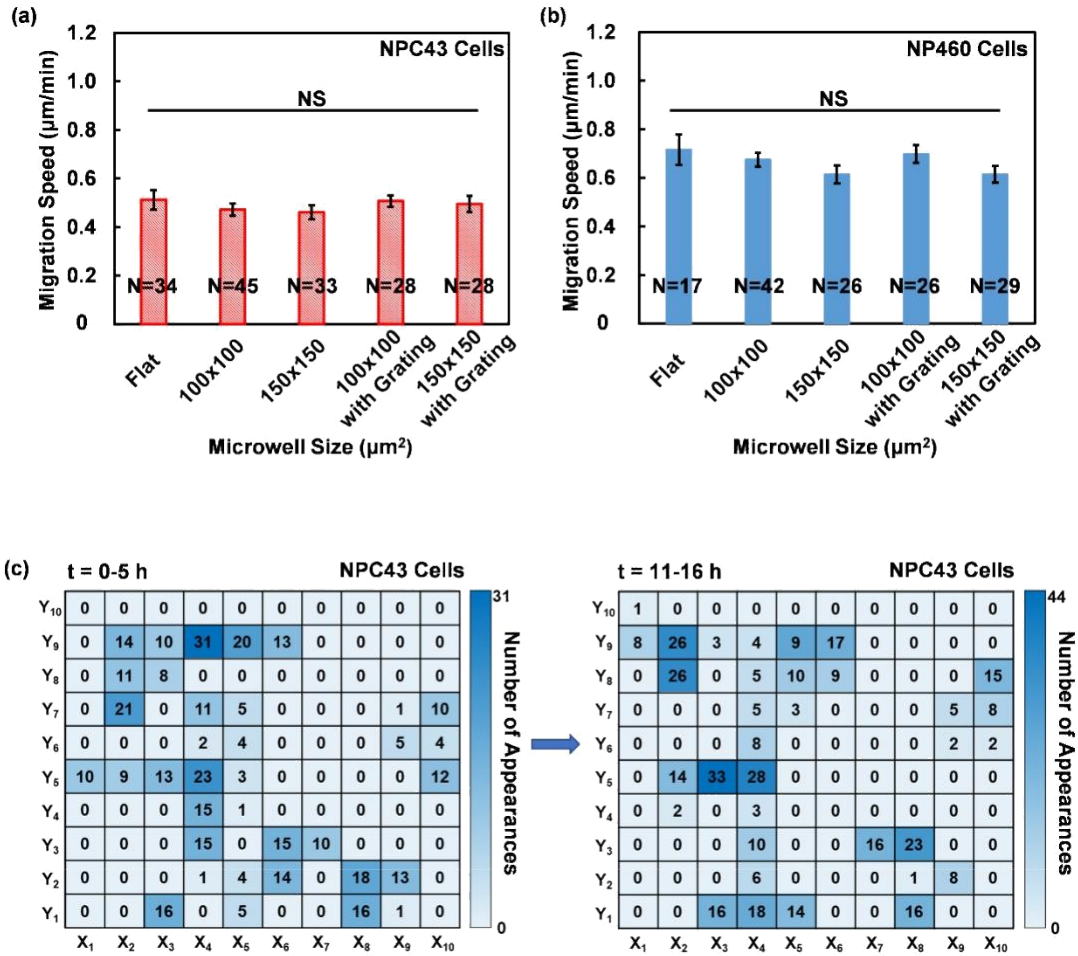


**150x150  $\mu\text{m}^2$  Microwells**

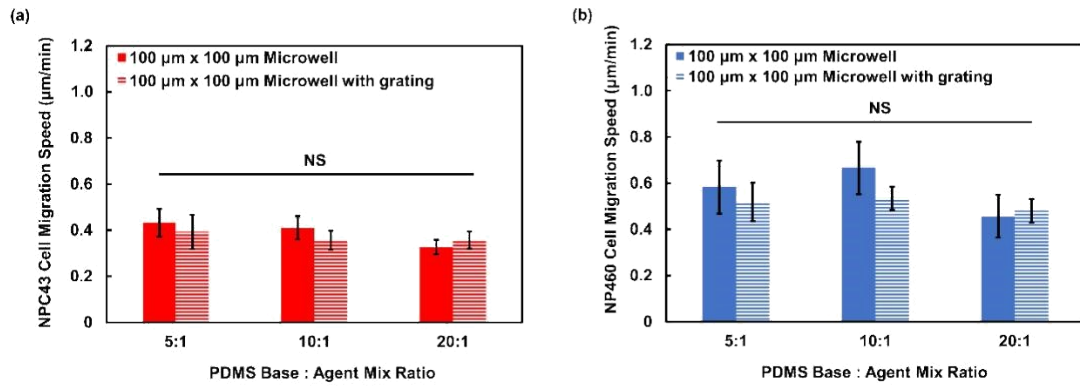


**150x150  $\mu\text{m}^2$  Microwells  
with Grating**

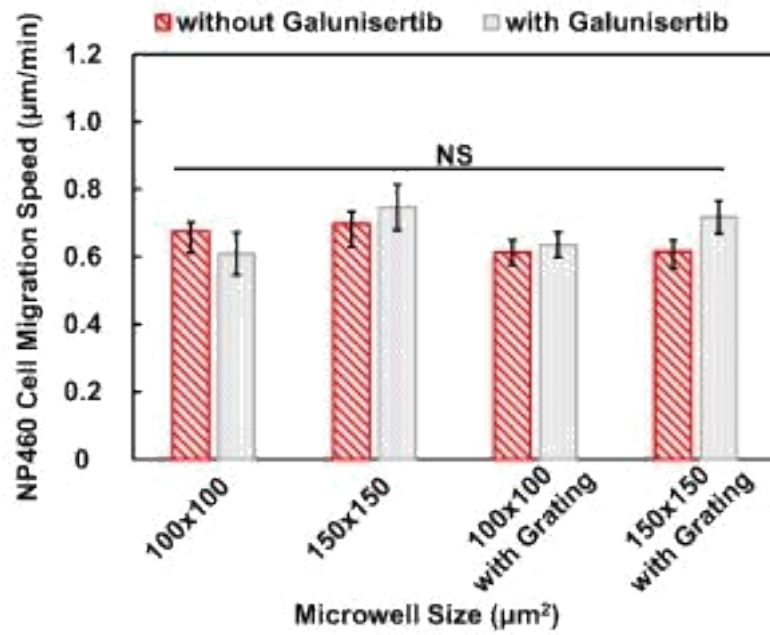
**Supplementary Figure S2.** Micrographs of NPC43 and NP460 cells co-cultured in (a) 100x100  $\mu\text{m}^2$  microwell with grating, (b) 150x150  $\mu\text{m}^2$  microwell, and (c) 150x150  $\mu\text{m}^2$  microwell with grating.



**Supplementary Figure S3.** Migration speed and distribution of NPC43 and NP460 cells co-cultured on flat surface. Migration speed of (a) NPC43 cells and (b) NP460 cells on flat surface compared with those in microwells. (c) Distribution of NPC43 cells on flat surface during first 0-5 h and last 11-16 h of imaging time. Each small region represents  $65 \times 65 \mu\text{m}^2$ . One-way ANOVA and Tukey's post hoc test, NS – not significant with  $p > 0.05$ .



**Supplementary Figure S4.** Migration speed of NPC43 and NP460 cells co-cultured in 100x100 µm<sup>2</sup> microwells and 100x100 µm<sup>2</sup> microwells with gratings with different PDMS base:agent mix ratio. (a) NPC43 cell migration speed. (b) NP460 migration speed. One-way ANOVA and Tukey's *post hoc* test, NS – not significant with  $p > 0.05$ .



**Supplementary Figure S5.** Migration speed of NP460 cells with and without galunisertib was not significantly different when they were co-cultured with NPC43 cells. One-way ANOVA and Tukey's *post hoc* test, NS – not significant with  $p > 0.05$ .