

Cancer cell cluster formation in endothelial-cancer cell mixture

Yun-Xuan Zhang¹, Chun-Yu Liu¹, Hsiang-Ying Chen¹, and Lin I¹.

(1) Department of Physics, National Central University, Jhongli, Taiwan 32001, molin7359@gmail.com

Self-organization and collective cell motions play crucial roles in binary cell mixture and many other biological processes. In this work, the spatiotemporal dynamics of cancer cell motion and clustering from the dilute state to the jammed monolayer in endothelial-cancer mixture (1:2 ratio) is experimentally investigated. It is found that, with increasing waiting time, individual cancer cells tend to aggregate and gradually form larger clusters, exhibiting fractal-like cluster boundaries due to the competition between collective CC motion and EC confinement effect. The fluctuations of CC cluster border are found to be correlated to the local cell dynamics.