

Localization

- 1 Jung, J. W., Macalino, S. J. Y., Cui, M., Kim, J. E., Kim, H.-J., Song, D.-G., ... Lee, J. W. (2019). Transmembrane 4 L Six Family Member 5 Senses Arginine for mTORC1 Signaling. *Cell Metabolism*.
2. Fernando Pérez-Cota, Richard J. Smith, Hany M. Elsheikha, and Matt Clark; New insights into the mechanical properties of Acanthamoeba castellanii cysts as revealed by phonon microscopy; *Biomedical Optics Express Vol. 10, Issue 5, pp. 2399-2408 (2019)*
3. Dong-Kyun Kim Young Sook Kim Chan Sik Kim Nam Ki Lee; Method for the Rapid Screening of Drug Candidates Using Single-Protein Tracking in a Living Cell;
4. Francesca Nardi, Philip Fitchev, Kyrsten M. Brooks, Omar E. Franco, Kevin Cheng, Simon W. Hayward, Michael A. Welte & Susan E. Crawford ; Lipid droplet velocity is a microenvironmental sensor of aggressive tumors regulated by V-ATPase and PEDF; *Laboratory Investigation volume 99, pages1822–1834(2019)*
5. Kyle Lewis, Alex Kiepas, Jesse Hudson, Julien Senecal, Jacqueline R. Ha, Elena Voorand, Matthew G. Annis, Valerie Sabourin, Ryuhjin Ahn, Rachel La Selva, Sébastien Tabariès, Brian E. Hsu, Matthew J. Siegel, Matthew Dankner, Eduardo Cepeda Canedo, Mathieu Lajoie, Ian R. Watson, Claire M. Brown, Peter M. Siegel & Josie Ursini-Siegel ; p66ShcA functions as a contextual promoter of breast cancer metastasis; *Breast Cancer Research volume 22, Article number: 7 (2020)*
6. Arthur T. Molines, Joël Lemière, Morgan Gazzola, Emilie I. Steinmark, Claire H. Edrington, Chieh-Ting (Jimmy) Hsu, Klaus Suhling, Gohta Goshima, Liam J. Holt, Manuel Thery, Gary. J. Brouhard, Fred Chang; Physical properties of the Cytoplasm modulate the rates of microtubule polymerization and depolymerization.; *PubPeer, 18 Nov 2020*
7. Li, X., Shi, X., Kaliszewski, M. J., & Smith, A. W. (2019). Fluorescence cross-correlation spectroscopy of lipid-peptide interactions on supported lipid bilayers. *Advances in Biomembranes and Lipid Self-Assembly*.
8. Jiwoong Kwon, Jong-Seok Park, Minsu Kang, Soobin Choi, Jumi Park, Gyeong Tae Kim, Changwook Lee, Sangwon Cha, Hyun-Woo Rhee & Sang-Hee Shim; Bright ligand-activatable fluorescent protein for high-quality multicolor live-cell super-resolution microscopy; *Nature Communications volume 11, Article number: 273 (2020)*
9. Kashiwagi, S., Fujioka, Y., Kondo, T., Satoh, A. O., Yoshida, A., Fujioka, M., ... Ohba, Y. (2019). Localization of BCR-ABL to stress granules contributes to its oncogenic function. *Cell Structure and Function*.
10. Dhanda, A. S., Yang, D., Kooner, A., & Guttman, J. A. (2020). Distribution of PDLIM1 at actin-rich structures generated by invasive and adherent bacterial pathogens. *The Anatomical Record*.
11. Kashiwagi, S., Fujioka, Y., Satoh, A. O., Yoshida, A., Fujioka, M., Nepal, P., ... Ohba, Y. (2019). Folding latency of fluorescent proteins affects the mitochondrial localization of fusion proteins. *Cell Structure and Function*.
12. Jinshan Qin, Yuting Guo, Boxin Xue, Peng Shi, Yang Chen, Qian Peter Su, Huiwen Hao, Shujuan Zhao, Congying Wu, Li Yu, Dong Li & Yujie Sun; ER-mitochondria contacts promote mtDNA nucleoids active transportation via mitochondrial dynamic tubulation; *Nature Communications volume 11, Article number: 4471 (2020)*

13. Unghwi Lee, Chunghon Choi, Seung Hyun Ryu, Daehun Park, Sang-Eun Lee, Kitae Kim, Yujin Kim, and Sunghoe Chang; SCAMP5 plays a critical role in axonal trafficking and synaptic localization of NHE6 to adjust quantal size at glutamatergic synapses; PNAS January 12, 2021 118 (2)
14. Kim, N. Y., Lee, S., Yu, J., Kim, N., Won, S. S., Park, H., & Heo, W. D. (2020). Optogenetic control of mRNA localization and translation in live cells. *Nature Cell Biology*.
15. Kim, J., Lee, S., Jung, K., Oh, W. C., Kim, N., Son, S., ... Do Heo, W. (2019). Intensiometric biosensors visualize the activity of multiple small GTPases in vivo. *Nature Communications*, 10(1).

Cell differentiation

1. Huang, S., Lim, S. Y., Gupta, A., Bag, N., & Wohland, T. (2017). Plasma membrane organization and dynamics is probe and cell line dependent. *Biochimica et Biophysica Acta (BBA) - Biomembranes*, 1859(9), 1483–1492.
2. Far-infrared irradiation inhibits adipogenic differentiation and stimulates osteogenic differentiation of human tonsil-derived mesenchymal stem cells: Role of ...
HY Kim, Y Yu, SY Oh, KK Wang... - *Cell Physiol* ..., 2019 - pdfs.semanticscholar.org
3. Chua, M. D., Liou, C.-H., Bogdan, A. C., Law, H. T., Yeh, K.-M., Lin, J.-C., ... Guttman, J. A. (2018). Klebsiella pneumoniae disassembles host microtubules in lung epithelial cells. *Cellular Microbiology*, e12977.

Cell viability & Cytotoxicity

1. Park, J.-E., Kim, S.-E., Keam, B., Park, H.-R., Kim, S., Kim, M., ... Heo, D. S. (2020). Anti-tumor effects of NK cells and anti-PD-L1 antibody with antibody-dependent cellular cytotoxicity in PD-L1-positive cancer cell lines. *Journal for ImmunoTherapy of Cancer*, 8(2), e000873.
2. Ma, & Suh. (2019). Cost-Effective Cosmetic-Grade Hyaluronan Hydrogels for ReNcell VM Human Neural Stem Cell Culture. *Biomolecules*, 9(10), 515.
3. Ma, W., Gehret, P., Hoff, R., Kelly, L., & Suh, W. (2019). The Investigation into the Toxic Potential of Iron Oxide Nanoparticles Utilizing Rat Pheochromocytoma and Human Neural Stem Cells. *Nanomaterials*, 9(3), 453.
4. Kim, K.-S., Han, J.-H., Choi, S. H., Jung, H.-Y., Park, J. D., An, H.-J., ... Park, K.-S. (2020). Cationic Nanoparticle-Mediated Activation of Natural Killer Cells for Effective Cancer Immunotherapy. *ACS Applied Materials & Interfaces*.
5. Alex Kiepas and Claire M. Brown; Microscope Hardware and Software Delays Cause Photo-Toxicity; www.microscopy-today.com • 2020 July
6. Kim, J. Y., Oyunbaatar, N.-E., & Lee, D.-W. (2019). Fully automated high-throughput cardiac toxicity screening platform using interlocking-structured 192 SU-8 cantilever arrays. *Sensors and Actuators B: Chemical*, 285, 129–136.
7. Hrstka, S. C. L., Ankam, S., Agac, B., Klein, J. P., Moore, R. A., Narapureddy, B., ... Dasari, S. (2020). Proteomic analysis of human iPSC-derived sensory neurons implicates cell stress and microtubule dynamics dysfunction in bortezomib-induced peripheral neurotoxicity. *Experimental Neurology*, 113520.

8. Eui Man Jeong, Ji-Woong Shin, Jisun Lim, Ju Hwan Kim, Hyewon Kang, Yingfu Yin, Hye-Mi Kim, YongHwan Kim, Sun-Gi Kim, Heun-Soo Kang, Dong-Myung Shin; Monitoring Glutathione Dynamics and Heterogeneity in Living Stem Cells, *Int J Stem Cells*. 2019; 12(2): 367–379.
9. Moon, H.-S., Yoo, C. E., Kim, S., Lee, J. E., & Park, W.-Y. (2020). Application of an open-chamber multi-channel microfluidic device to test chemotherapy drugs. *Scientific Reports*, 10(1).
10. Grist, S. M., Nasseri, S. S., Laplatine, L., Schmok, J. C., Yao, D., Hua, J., ... Cheung, K. C. (2019). Long-term monitoring in a microfluidic system to study tumour spheroid response to chronic and cycling hypoxia. *Scientific Reports*, 9(1).

Phagocytosis & Cell Fusion

1. Zaidi, N. E., Shazali, N. A. H., Chor, A. L. T., Osman, M. A., Ibrahim, K., Jaoi-Edward, M., & Afizan Nik Abd Rahman, N. M. (2019). Time-Lapse 2D Imaging of Phagocytic Activity in M1 Macrophage-4T1 Mouse Mammary Carcinoma Cells in Co-cultures. *Journal of Visualized Experiments*, (154). doi:10.3791/60281
2. Suree Kim, Soohee Choi & Dongmin Kang*; Quantitative and qualitative analysis of autophagy flux using imaging; *BMB Reports* 2020; 53(5): 241-247
3. Shuxun Chen, Wang Ran and Dong Sun; LASER-INDUCED CELL FUSION BY ROBOT-TWEEZERS MANIPULATION; *The Encyclopedia of Medical Robotics*, pp. 233-253 (2018)
4. Zaidi, N. E., Shazali, N. A. H., Chor, A. L. T., Osman, M. A., Ibrahim, K., Jaoi-Edward, M., & Afizan Nik Abd Rahman, N. M. (2019). Time-Lapse 2D Imaging of Phagocytic Activity in M1 Macrophage-4T1 Mouse Mammary Carcinoma Cells in Co-cultures. *Journal of Visualized Experiments*,

Neurite outgrowth/process extension

1. Kim, Y., Lee, U., Choi, C., & Chang, S. (2020). Release mode dynamically regulates the RRP refilling mechanism at individual hippocampal synapses. *The Journal of Neuroscience*, JN-RM-3029-19. doi:10.1523/jneurosci.3029-19.2020
2. Cho, H., Jeon, H.-J., Park, S., Park, C.-S., & Chung, E. (2020). Neurite growth of trigeminal ganglion neurons in vitro with near-infrared light irradiation. *Journal of Photochemistry and Photobiology B: Biology*, 111959.
3. Green, M. V., Pengo, T., Raybuck, J. D., Naqvi, T., McMullan, H. M., Hawkinson, J. E., ... Thayer, S. A. (2019). Automated Live-Cell Imaging of Synapses in Rat and Human Neuronal Cultures. *Frontiers in Cellular Neuroscience*, 13.
4. Kim, Y., Jang, Y.-N., Kim, J.-Y., Kim, N., Noh, S., Kim, H., ... Lee, K. J. (2020). Microtubule-associated protein 2 mediates induction of long-term potentiation in hippocampal neurons. *The FASEB Journal*.
5. Kim, S., Kim, N., Lee, J., Kim, S., Hong, J., Son, S., & Do Heo, W. (2020). Dynamic Fas signaling network regulates neural stem cell proliferation and memory enhancement. *Science Advances*, 6(17),
6. Kwang Woo Ko, Jeffrey Milbrandt, Aaron DiAntonio; SARM1 acts downstream of neuroinflammatory and necroptotic signaling to induce axon degeneration; *J Cell Biol* (2020) 219 (8)

Cell migration and invasion

1. Sangwoo Kwon, Woochul Yang, Donggerami Moon & Kyung Sook Kim; Biomarkers to quantify cell migration characteristics; *Cancer Cell International* volume 20, Article number: 217 (2020)
2. Corina DeKraker, Laurence Goldin-Blais, Eric Boucher & Craig A. Mandato ; Dynamics of actin polymerisation during the mammalian single-cell wound healing response; *BMC Research Notes* volume 12, Article number: 420 (2019)
3. Kiepas, A., Voorand, E., Senecal, J., Ahn, R., Annis, M. G., Jacquet, K., ... Brown, C. M. (2020). The SHCA adapter protein cooperates with lipoma-preferred partner in the regulation of adhesion dynamics and invadopodia formation. *Journal of Biological Chemistry*, jbc.RA119.011903.
4. Jessica Yun,Mi Jeong Heo,Yun Seok Kim,Min Joo Kim,Aree Moon,Sang Geon Kim; Estrogen receptor alpha inhibits mesenchymal and amoeboidal movement of liver cancer cell via G protein subunit alpha 12; 12. *Authorea*. November 24, 2020.
5. Park, J., Kim, T., Choi, J. C., & Doh, J. (2019). In Situ Subcellular Detachment of Cells Using a Cell-Friendly Photoresist and Spatially Modulated Light. *Advanced Science*, 1900566.
6. Park, H., & Doh, J. (2019). T cell migration in microchannels densely packed with T cells. *Scientific Reports*, 9(1).

Signal transduction

1. Min Gyu Jeong, Kai Zhou, Soyeon Park, HyeongJeon An, Yonghoon Kwon, Yeonho Chang, Do-Hyeon Kim & Sung Ho Ryu; Analysis of transient membrane protein interactions by single-molecule diffusional mobility shift assay; *Experimental & Molecular Medicine* volume 53, pages291–299(2021)
2. Azbazdar, Y., Ozalp, O., Sezgin, E., Veerapathiran, S., Duncan, A. L., Sansom, M. S. P., ... Ozhan, G. (2019). More Favorable Palmitic Acid Over Palmitoleic Acid Modification of Wnt3 Ensures Its Localization and Activity in Plasma Membrane Domains. *Frontiers in Cell and Developmental Biology*, 7.
3. Dhakal, R., Tong, C., Anderson, S., Kashina, A. S., Cooperman, B., & Bau, H. H. (2018). Dynamics of intracellular stress-induced tRNA trafficking. *Nucleic Acids Research*.
4. Kim, S., Shin, J., Oh, H., Ahn, S., Kim, N., & Heo, W. D. (2019). An inducible system for in vitro and in vivo Fas activation using FKBP-FRB-rapamycin complex. *Biochemical and Biophysical Research Communications*.
5. Jinoh Kim, Jung-Yeon Yoo, Jung Min Suh, Sujin Park, Dongmin Kang, Hanjoong Jo & Yun Soo Bae ; The flagellin-TLR5-Nox4 axis promotes the migration of smooth muscle cells in atherosclerosis; *Experimental & Molecular Medicine* volume 51, pages1–13(2019)
6. Lee, J. H., Kim, J., Park, J.-H., Heo, W. D., & Lee, G. M. (2019). Analysis of Golgi pH in CHO cells using ratiometric pH-sensitive fluorescent proteins. *Biotechnology and Bioengineering*.
7. Caron, P., Pankotai, T., Wiegant, W. W., Tollenaere, M. A. X., Furst, A., Bonhomme, C., ... van Attikum, H. (2019). WWP2 ubiquitylates RNA polymerase II for DNA-PK-dependent transcription arrest and repair at DNA breaks. *Genes & Development*.
8. Maltais, R., Ngueta Djiemeny, A., Roy, J., Barbeau, X., Lambert, J.-P., & Poirier, D. (2020). Design and synthesis of dansyl-labeled inhibitors of steroid sulfatase for optical imaging. *Bioorganic & Medicinal Chemistry*, 115368.

9. Magdalena B. Rother, Stefania Pellegrino, Rebecca Smith, Marco Gatti, Cornelia Meisenberg, Wouter W. Wiegant, Martijn S. Luijsterburg, Ralph Imhof, Jessica A. Downs, Alfred C. O. Vertegaal, Sébastien Huet, Matthias Altmeyer & Haico van Attikum; CHD7 and 53BP1 regulate distinct pathways for the re-ligation of DNA double-strand breaks; *Nature Communications* volume 11, Article number: 5775 (2020)
10. Yu, D., Lee, H., Hong, J., Jung, H., Jo, Y., Oh, B.-H., ... Do Heo, W. (2019). Optogenetic activation of intracellular antibodies for direct modulation of endogenous proteins. *Nature Methods*.
11. Kim, S., Kyung, T., Chung, J.-H., Kim, N., Keum, S., Lee, J., ... Do Heo, W. (2020). Non-invasive optical control of endogenous Ca²⁺ channels in awake mice. *Nature Communications*, 11(1).
12. Hwang, J., Yoon, J., Cho, Y., Cha, P., Park, J., & Choi, K. (2019). A mutant KRAS-induced factor REG4 Promotes Cancer Stem Cell Properties via Wnt/β-catenin Signaling. *International Journal of Cancer*. doi:10.1002/ijc.32728
13. Jang-June Park, Emily P. Thi, Victor H. Carpio, Yingzhi Bi, Andrew G. Cole, Bruce D. Dorsey, Kristi Fan, Troy Harasym, Christina L. Iott, Salam Kadhim, Jin Hyang Kim, Amy C. H. Lee, Duyan Nguyen, Bhavna S. Paratala, Ruiqing Qiu, Andre White, Damodharan Lakshminarasimhan, Christopher Leo, Robert K. Suto, Rene Rijnbrand, Sunny Tang, Michael J. Sofia & Chris B. Moore; Checkpoint inhibition through small molecule-induced internalization of programmed death-ligand 1; *Nature Communications* volume 12, Article number: 1222 (2021)
14. Chen, B.-H., Chang, Y.-J., Lin, S., & Yang, W. Y. (2020). Hsc70/Stub1 promotes the removal of individual oxidatively stressed peroxisomes. *Nature Communications*,
15. Cavanaugh, K. E., Oakes, P. W., & Gardel, M. L. (2020). Optogenetic Control of RhoA to Probe Subcellular Mechanochemical Circuitry. *Current Protocols in Cell Biology*, 86(1).
16. Soyoung Kim, Gahyeon Song, Taebok Lee, Minseong Kim, Jeongrae Kim, Hyeryun Kwon, Jiyoung Kim, Wonyoung Jeong, Ukjin Lee, Chaebin Na, Sangwon Kang, Wantae Kim, Je Kyung Seong & Eek-hoon Jho; PARsylated transcription factor EB (TFEB) regulates the expression of a subset of Wnt target genes by forming a complex with β-catenin-TCF/LEF1; *Cell Death & Differentiation* (2021)
17. Kate E. Cavanaugh, Michael Staddon, Theresa A. Chmiel, Robert Harmon, Srikanth Budnar, Alpha S. Yap, Shiladitya Banerjee, Margaret L. Gardel; Asymmetric Contraction of Adherens Junctions arises through RhoA and E-cadherin feedback; *bioRxiv* February 26, 2021.
18. Kim, J., Ki, Y., Lee, H., Hur, M. S., Baik, B., ... Lim, C. (2020). The voltage-gated potassium channel Shaker promotes sleep via thermosensitive GABA transmission. *Communications Biology*, 3(1).
19. Lok, T. M., Wang, Y., Xu, W. K., Xie, S., Ma, H. T., & Poon, R. Y. C. (2020). Mitotic slippage is determined by p31comet and the weakening of the spindle-assembly checkpoint. *Oncogene*.

* Note that application of our incubator system is described in further publications.

* Further publications are searchable on scientific journals.

* The above applications are voluntarily classified by LCI.