

Prospect T1

Compact, high-frequency preclinical ultrasound imaging

References

- Lee, K. H., Chou, Y. H., Chen, C. M., & Li, P. C. (2005). Breast tumor classification based on image sequence analysis during compression. *Proceedings - IEEE Ultrasonics Symposium, 2*, 1380–1383. <https://doi.org/10.1109/ULTSYM.2005.1603111>
- Liao, A. H., Li, Y. K., Lee, W. J., Wu, M. F., Liu, H. L., & Kuo, M. L. (2012). Estimating the Delivery Efficiency of Drug-Loaded Microbubbles in Cancer Cells with Ultrasound and Bioluminescence Imaging. *Ultrasound in Medicine and Biology, 38*(11), 1938–1948. <https://doi.org/10.1016/j.ultrasmedbio.2012.07.013>
- Liao, A. H., Shi, Z. P., Shih, Y. F., Chuang, H. C., & Wang, C. H. (2012). The application of ultrasound enhanced local drug delivery with albumin microbubbles in the inner ear system. *IEEE International Ultrasonics Symposium, IUS*, 440–443. <https://doi.org/10.1109/ULTSYM.2012.0109>
- Yeh, C. L., Sheu, Y. L., Kuo, P. L., & Li, P. C. (2012). Investigation on anisotropy of elastic properties in tendon using shear wave elasticity imaging. *IEEE International Ultrasonics Symposium, IUS*, 1359–1362. <https://doi.org/10.1109/ULTSYM.2012.0339>
- Yeh, C. L., Sheu, Y. L., Kuo, P. L., & Li, P. C. (2012). Investigation on anisotropy of elastic properties in tendon using shear wave elasticity imaging. *IEEE International Ultrasonics Symposium, IUS*, 1359–1362. <https://doi.org/10.1109/ULTSYM.2012.0339>
- Chen, W. P., Lin, L.-C., & Li, P.-C. (2013). Using Prospect High Resolution Imaging System to Monitor Cardiac Function in Post Myocardial Infarct Mice Treated With or Without a TGF β Inhibitor. *Ultrasound in Medicine & Biology, 39*(5), S30. <https://doi.org/10.1016/j.ultrasmedbio.2013.02.154>
- Liao, A. H., Ma, W. C., & Wu, M. F. (2013). Evaluation of Ultrasound Combined with Chitosan for the Control of Weight and Local Fat in Mice. *Ultrasound in Medicine and Biology, 39*(10), 1794–1803. <https://doi.org/10.1016/j.ultrasmedbio.2013.04.025>
- Pan, B.-J., Jiang, M.-S., Liang, C.-J., Chen, W.-P., Li, P.-C., & Chen, Y.-L. (2013). To Investigate the Progression of Myocardial Infarction by Echocardiographic Assessment. *Ultrasound in Medicine & Biology, 39*(5), S29–S30. <https://doi.org/10.1016/j.ultrasmedbio.2013.02.153>
- Shen, C. C., & Peng, C. K. (2013). Range side-lobe inversion for dual-frequency harmonic imaging with chirp excitation. *IEEE International Ultrasonics Symposium, IUS*, 33–36. <https://doi.org/10.1109/ULTSYM.2013.0009>
- Tu, Y., Wan, L., Fan, Y., Wang, K., Bu, L., Huang, T., Cheng, Z., & Shen, B. (2013). Ischemic Postconditioning-Mediated miRNA-21 Protects against Cardiac ischemia/reperfusion Injury via PTEN/Akt Pathway. *PLoS ONE, 8*(10), e75872. <https://doi.org/10.1371/journal.pone.0075872>
- Wang, Y.-H., Liao, A.-H., Lin, J.-Y., Lee, C.-R., Wu, C.-H., Liu, T.-M., Wang, C.-R., & Li, P.-C. (2013). Enhanced delivery of gold nanoparticles by acoustic cavitation for photoacoustic imaging and photothermal therapy. *Photons Plus Ultrasound: Imaging and Sensing 2013, 8581*, 858123. <https://doi.org/10.1117/12.2005870>

- An, L., Hu, H., Du, J., Wei, J., Wang, L., Yang, H., Wu, D., Shi, H., Li, F., & Yang, S. (2014). Paramagnetic hollow silica nanospheres for in vivo targeted ultrasound and magnetic resonance imaging. *Biomaterials*, *35*(20), 5381–5392. <https://doi.org/10.1016/j.biomaterials.2014.03.030>
- Li, C. T., Tsai, C. H., Li, P. C., & Kuo, P. L. (2014). 3D cell mechanobiology study using shear wave elasticity imaging. *IEEE International Ultrasonics Symposium, IUS*, 1865–1868. <https://doi.org/10.1109/ULTSYM.2014.0463>
- Wang, Y. H., Chen, S. P., Liao, A. H., Yang, Y. C., Lee, C. R., Wu, C. H., Wu, P. C., Liu, T. M., Wang, C. R. C., & Li, P. C. (2014). Synergistic delivery of gold nanorods using multifunctional microbubbles for enhanced plasmonic photothermal therapy. *Scientific Reports*, *4*(1). <https://doi.org/10.1038/srep05685>
- Wu, H., Shi, H., Zhang, H., Wang, X., Yang, Y., Yu, C., Hao, C., Du, J., Hu, H., & Yang, S. (2014). Prostate stem cell antigen antibody-conjugated multiwalled carbon nanotubes for targeted ultrasound imaging and drug delivery. *Biomaterials*, *35*(20), 5369–5380. <https://doi.org/10.1016/j.biomaterials.2014.03.038>
- Yeh, C. L., Chen, B. R., Tseng, L. Y., Jao, P., Su, T. H., & Li, P. C. (2014). Shear wave elastography of a liver fibrosis mouse model using a high frequency ultrasound system with mechanical scanning. *IEEE International Ultrasonics Symposium, IUS*, 1140–1143. <https://doi.org/10.1109/ULTSYM.2014.0280>
- Ho, N. C., & Li, P. C. (2015, October). Near field shear wave elasticity imaging with high frequency single element transducers. *2015 IEEE International Ultrasonics Symposium, IUS 2015*. <https://doi.org/10.1109/ULTSYM.2015.0379>
- Kuo, P.-L., & Li, P.-C. (2015). Evaluating elasticity dynamics of three-dimensional cell-matrix using ultrasonic shear waves. *The Proceedings of the Asian Pacific Conference on Biomechanics : Emerging Science and Technology in Biomechanics, 2015.8(0)*, 121. <https://doi.org/10.1299/jsmeapbio.2015.8.121>
- Liao, A. H., Chuang, H. C., & Chung, H. Y. (2015). Efficacy of ultrasound mediated microbubbles in diclofenac gel to enhance transdermal permeation in rheumatoid arthritis induced rat. *Proceedings of the Annual International Conference of the IEEE Engineering in Medicine and Biology Society, EMBS, 2015-Novem*, 3521–3524. <https://doi.org/10.1109/EMBC.2015.7319152>
- Lien, C. Y., Chuang, T. Y., Hsu, C. H., Lin, C. L., Wang, S. E., Sheu, S. J., Chien, C. T., & Wu, C. H. (2015). Oral treatment with the herbal formula B307 alleviates cardiac toxicity in doxorubicin-treated mice via suppressing oxidative stress, inflammation, and apoptosis. *OncoTargets and Therapy*, *8*, 1193–1210. <https://doi.org/10.2147/OTT.S82936>
- Lien, C.-Y., Jensen, B. T., Chen, M.-L., Wu, C.-H., Cheng, H., Lin, C.-L., Wang, S.-E., Hsiao, C.-J., & Chuang, T.-Y. (2015). Exercise Preconditioning Does Not Affect Antitumor Activities Of Doxorubicin. *Medicine & Science in Sports & Exercise*, *47*, 758–759. <https://doi.org/10.1249/01.mss.0000478808.36526.55>
- Shen, C. C., Yu, J. G., & Jeng, G. (2015, October). Implementation and evaluation of slow-time golay decoding for pre-clinical high-frequency color doppler imaging in mice. *2015 IEEE International Ultrasonics Symposium, IUS 2015*. <https://doi.org/10.1109/ULTSYM.2015.0330>
- Tomita, K., Takashina, M., Mizuno, N., Sakata, K., Hattori, K., Imura, J., Ohashi, W., & Hattori, Y. (2015). Cardiac fibroblasts: Contributory role in septic cardiac dysfunction. *Journal of Surgical Research*, *193*(2), 874–887. <https://doi.org/10.1016/j.jss.2014.09.012>
- Wang, Q., Yokoo, H., Takashina, M., Sakata, K., Ohashi, W., Abedelzaher, L. A., Imaizumi, T., Sakamoto, T., Hattori, K., Matsuda, N., & Hattori, Y. (2015). Anti-inflammatory profile of levosimendan in cecal ligation-induced septic mice and in lipopolysaccharide-stimulated macrophages. *Critical Care Medicine*, *43*(11), e508–e520. <https://doi.org/10.1097/CCM.0000000000001269>
- Goh, M. C., Hwang, Y., & Tae, G. (2016). Epidermal growth factor loaded heparin-based hydrogel sheet for skin wound healing. *Carbohydrate Polymers*, *147*, 251–260. <https://doi.org/10.1016/j.carbpol.2016.03.072>

- Hu, H., Zhang, X., Sun, J., An, L., Du, J., Yang, H., Li, F., Wu, H., & Yang, S. (2016). Preparation of pH-responsive hollow poly(MAA-*co*-EGDMA) nanocapsules for drug delivery and ultrasound imaging. *RSC Advances*, *6*(105), 103754–103762. <https://doi.org/10.1039/c6ra21411h>
- Liao, A. H., Chung, H. Y., Chen, W. S., & Yeh, M. K. (2016). Efficacy of Combined Ultrasound-and-Microbubbles-Mediated Diclofenac Gel Delivery to Enhance Transdermal Permeation in Adjuvant-Induced Rheumatoid Arthritis in the Rat. *Ultrasound in Medicine and Biology*, *42*(8), 1976–1985. <https://doi.org/10.1016/j.ultrasmedbio.2016.03.031>
- Liao, A. H., Lu, Y. J., Hung, C. R., & Yang, M. Y. (2016). Efficacy of transdermal magnesium ascorbyl phosphate delivery after ultrasound treatment with microbubbles in gel-type surrounding medium in mice. *Materials Science and Engineering C*, *61*, 591–598. <https://doi.org/10.1016/j.msec.2015.12.058>
- Liu, W. W., Liu, S. W., Liou, Y. R., Wu, Y. H., Yang, Y. C., Wang, C. R. C., & Li, P. C. (2016). Nanodroplet-Vaporization-Assisted Sonoporation for Highly Effective Delivery of Photothermal Treatment. *Scientific Reports*, *6*(1). <https://doi.org/10.1038/srep24753>
- Liu, W. W., Wu, C. T., Wang, C. R. C., & Li, P. C. (2016). Acoustic and optical droplet vaporization for enhanced sonoporation. *IEEE International Ultrasonics Symposium, IUS, 2016-Novem*. <https://doi.org/10.1109/ULTSYM.2016.7728732>
- Shen, C. C., Yu, S. C., & Liu, C. Y. (2016). Using high-frequency ultrasound statistical scattering model to assess nonalcoholic fatty liver disease (NAFLD) in Mice. *2016 39th International Conference on Telecommunications and Signal Processing, TSP 2016*, 379–382. <https://doi.org/10.1109/TSP.2016.7760901>
- Yeh, C. L., Kuo, P. L., Gennisson, J. L., Brum, J., Tanter, M., & Li, P. C. (2016). Shear Wave Measurements for Evaluation of Tendon Diseases. *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, *63*(11), 1906–1921. <https://doi.org/10.1109/TUFFC.2016.2591963>
- Chiang, M. H., Liang, C. J., Liu, C. W., Pan, B. J., Chen, W. P., Yang, Y. F., Lee, I. T., Tsai, J. S., Lee, C. W., & Chen, Y. L. (2017). Aliskiren improves Ischemia- and oxygen glucose deprivation-induced cardiac injury through activation of autophagy and AMP-activated protein kinase. *Frontiers in Pharmacology*, *8*(NOV). <https://doi.org/10.3389/fphar.2017.00819>
- Kuo, P. L., Charng, C. C., Wu, P. C., & Li, P. C. (2017). Shear-wave elasticity measurements of three-dimensional cell cultures for mechanobiology. *Journal of Cell Science*, *130*(1), 292–302. <https://doi.org/10.1242/jcs.186320>
- Liu, X., Xu, J., Wang, S., Yu, X., Kou, B., Chai, M., Zang, Y., & Chen, D. (2017). Synergistic inhibitory effects on hepatocellular carcinoma with recombinant human adenovirus Asp2 and oxaliplatin via p53-independent pathway in vitro and in vivo. *International Journal of Oncology*, *51*(4), 1291–1299. <https://doi.org/10.3892/ijo.2017.4105>
- Sakai, M., Suzuki, T., Tomita, K., Yamashita, S., Palikhe, S., Hattori, K., Yoshimura, N., Matsuda, N., & Hattori, Y. (2017). Diminished responsiveness to dobutamine as an inotrope in mice with cecal ligation and puncture-induced sepsis: Attribution to phosphodiesterase 4 upregulation. *American Journal of Physiology - Heart and Circulatory Physiology*, *312*(6), H1224–H1237. <https://doi.org/10.1152/ajpheart.00828.2016>
- Zhu, C., Wang, Y., Liu, H., Mu, H., Lu, Y., Zhang, J., & Huang, J. (2017). Oral administration of Ginsenoside Rg1 prevents cardiac toxicity induced by doxorubicin in mice through anti-apoptosis. *Oncotarget*, *8*(48), 83792–83801. <https://doi.org/10.18632/oncotarget.19698>
- Zhu, L., Kalimuthu, S., Gangadaran, P., Oh, J. M., Lee, H. W., Baek, S. H., Jeong, S. Y., Lee, S. W., Lee, J., & Ahn, B. C. (2017). Exosomes derived from natural killer cells exert therapeutic effect in melanoma. *Theranostics*, *7*(10), 2732–2745. <https://doi.org/10.7150/thno.18752>
- Comenge, J., Sharkey, J., Fragueiro, O., Wilm, B., Brust, M., Murray, P., Levy, R., & Plagge, A. (2018). Multimodal cell tracking from systemic administration to tumour growth by combining gold nanorods and reporter genes. *ELife*, *7*. <https://doi.org/10.7554/eLife.33140>

- Du, J., Li, X. Y., Hu, H., Xu, L., Yang, S. P., & Li, F. H. (2018). Preparation and Imaging Investigation of Dual-targeted C3F8-filled PLGA Nanobubbles as a Novel Ultrasound Contrast Agent for Breast Cancer. *Scientific Reports*, *8*(1). <https://doi.org/10.1038/s41598-018-21502-x>
- Li, T., Zhou, J., Zhang, C., Zhi, X., Niu, J., Fu, H., Song, J., & Cui, D. (2018). Surface-engineered nanobubbles with pH-/light-responsive drug release and charge-switchable behaviors for active NIR/MR/US imaging-guided tumor therapy. *NPG Asia Materials*, *10*(11), 1046–1060. <https://doi.org/10.1038/s41427-018-0094-6>
- Liao, A. H., Hung, C. R., Chen, H. K., & Chiang, C. P. (2018). Ultrasound-Mediated EGF-Coated-Microbubble Cavitation in Dressings for Wound-Healing Applications. *Scientific Reports*, *8*(1). <https://doi.org/10.1038/s41598-018-26702-z>
- Scarfe, L., Taylor, A., Sharkey, J., Harwood, R., Barrow, M., Comenge, J., Beeken, L., Astley, C., Santeramo, I., Hutchinson, C., Ressel, L., Smythe, J., Austin, E., Levy, R., Rosseinsky, M. J., Adams, D. J., Poptani, H., Park, B. K., Murray, P., & Wilm, B. (2018). Non-invasive imaging reveals conditions that impact distribution and persistence of cells after in vivo administration. *Stem Cell Research and Therapy*, *9*(1). <https://doi.org/10.1186/s13287-018-1076-x>
- Sharkey, J., Ressel, L., Brilliant, N., Wilm, B., Park, B. K., & Murray, P. (2018). *Development of an imaging toolbox to assess the therapeutic potential and biodistribution of macrophages in a mouse model of multiple organ dysfunction*. <https://doi.org/10.1101/372482>
- Wang, S., Ni, D., Yue, H., Luo, N., Xi, X., Wang, Y., Shi, M., Wei, W., & Ma, G. (2018). Exploration of Antigen Induced CaCO₃ Nanoparticles for Therapeutic Vaccine. *Small*, *14*(14), 1704272. <https://doi.org/10.1002/sml.201704272>
- Xu, L., Du, J., Wan, C. F., Zhang, Y., Xie, S. W., Li, H. L., Yang, H., & Li, F. H. (2018). Ultrasound molecular imaging of breast cancer in MCF-7 orthotopic mice using gold nanoshelled poly(lactic-co-glycolic acid) nanocapsules: A novel dual-targeted ultrasound contrast agent. *International Journal of Nanomedicine*, *13*, 1791–1807. <https://doi.org/10.2147/IJN.S153993>
- Yamashita, S., Suzuki, T., Iguchi, K., Sakamoto, T., Tomita, K., Yokoo, H., Sakai, M., Misawa, H., Hattori, K., Nagata, T., Watanabe, Y., Matsuda, N., Yoshimura, N., & Hattori, Y. (2018). Cardioprotective and functional effects of levosimendan and milrinone in mice with cecal ligation and puncture-induced sepsis. *Naunyn-Schmiedeberg's Archives of Pharmacology*, *391*(9), 1021–1032. <https://doi.org/10.1007/s00210-018-1527-z>
- Yu, J. G., Liu, P. H., & Shen, C. C. (2018). SNR improvement and range side lobe suppression in Golay-encoded Doppler detection for ultrasound high-frequency swept-scan imaging system. *Biomedical Signal Processing and Control*, *41*, 31–39. <https://doi.org/10.1016/j.bspc.2017.11.006>
- Ashraf, S., Taylor, A., Sharkey, J., Barrow, M., Murray, P., Wilm, B., Poptani, H., Rosseinsky, M. J., Adams, D. J., & Lévy, R. (2019). In vivo fate of free and encapsulated iron oxide nanoparticles after injection of labelled stem cells. *Nanoscale Advances*, *1*(1), 367–377. <https://doi.org/10.1039/c8na00098k>
- Ashraf, S., Taylor, A., Sharkey, J., Barrow, M., Murray, P., Wilm, B., Poptani, H., Rosseinsky, M. J., Adams, D. J., & Lévy, R. (2019). In vivo fate of free and encapsulated iron oxide nanoparticles after injection of labelled stem cells. *Nanoscale Advances*, *1*(1), 367–377. <https://doi.org/10.1039/c8na00098k>
- Mu, H., Liu, H., Zhang, J., Huang, J., Zhu, C., Lu, Y., Shi, Y., & Wang, Y. (2019). Ursolic acid prevents doxorubicin-induced cardiac toxicity in mice through eNOS activation and inhibition of eNOS uncoupling. *Journal of Cellular and Molecular Medicine*, *23*(3), 2174–2183. <https://doi.org/10.1111/jcmm.14130>
- Ou, D. L., Lin, Y. Y., Hsu, C. L., Lin, Y. Y., Chen, C. W., Yu, J. S., Miaw, S. C., Hsu, P. N., Cheng, A. L., & Hsu, C. (2019). Development of a PD-L1-expressing orthotopic liver cancer model: Implications for immunotherapy for hepatocellular carcinoma. *Liver Cancer*, *8*(3), 155–171. <https://doi.org/10.1159/000489318>
- Ren, J. J., Huang, T. J., Zhang, Q. Q., Zhang, H. Y., Guo, X. H., Fan, H. Q., Li, R. K., & Liu, L. X. (2019). Insulin-like growth factor binding protein related protein 1 knockdown attenuates hepatic fibrosis via the regulation of MMPs/TIMPs in mice. *Hepatobiliary and Pancreatic Diseases International*, *18*(1), 38–47. <https://doi.org/10.1016/j.hbpd.2018.08.008>

- Sharkey, J., Ressel, L., Brilliant, N., Scarfe, L., Wilm, B., Park, B. K., & Murray, P. (2019). A noninvasive imaging toolbox indicates limited therapeutic potential of conditionally activated macrophages in a mouse model of multiple organ dysfunction. *Stem Cells International*, 2019, 1–13. <https://doi.org/10.1155/2019/7386954>
- Taylor, A., Sharkey, J., Harwood, R., Scarfe, L., Barrow, M., Rosseinsky, M. J., Adams, D. J., Wilm, B., & Murray, P. (2019). Multimodal Imaging Techniques Show Differences in Homing Capacity Between Mesenchymal Stromal Cells and Macrophages in Mouse Renal Injury Models. *Molecular Imaging and Biology*. <https://doi.org/10.1007/s11307-019-01458-8>
- Wang, L., Qin, D., Shi, H., Zhang, Y., Li, H., & Han, Q. (2019). MiR-195-5p Promotes Cardiomyocyte Hypertrophy by Targeting MFN2 and FBXW7. *BioMed Research International*, 2019, 1–10. <https://doi.org/10.1155/2019/1580982>
- Watanabe, A., Sheng, H., Endo, H., Feril, L. B., Irie, Y., Ogawa, K., Moosavi-Nejad, S., & Tachibana, K. (2019). Echographic and physical characterization of albumin-stabilized nanobubbles. *Heliyon*, 5(6), e01907. <https://doi.org/10.1016/j.heliyon.2019.e01907>
- Chiang, M. H., Liang, C. J., Lin, L. C., Yang, Y. F., Huang, C. C., Chen, Y. H., Kao, H. L., Chen, Y. C., Ke, S. R., Lee, C. W., Lin, M. S., & Chen, Y. L. (2020). miR-26a attenuates cardiac apoptosis and fibrosis by targeting ataxia–telangiectasia mutated in myocardial infarction. *Journal of Cellular Physiology*. <https://doi.org/10.1002/jcp.29537>
- Liao, A.-H., Lin, K.-H., Chuang, H.-C., Tsai, C.-H., Lin, Y.-C., Wang, C.-H., Shih, C.-P., & Liu, H.-L. (2020). Low-frequency dual-frequency ultrasound-mediated microbubble cavitation for transdermal minoxidil delivery and hair growth enhancement. *Scientific Reports*, 10(1), 4338. <https://doi.org/10.1038/s41598-020-61328-0>
- Liao, A.-H., Wang, C.-H., Weng, P.-Y., Lin, Y.-C., Wang, H., Chen, H.-K., Liu, H.-L., Chuang, H.-C., & Shih, C.-P. (2020). Ultrasound-induced microbubble cavitation via a transcanal or transcranial approach facilitates inner ear drug delivery. *JCI Insight*, 5(3). <https://doi.org/10.1172/jci.insight.132880>