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Research Keywords

Chemical based aging research, Fluorescent imaging, Fluorescent probe, Cell selective probe, Reverse aging

Academic Career

Professor, 2017-present, Chemistry, POSTECH Associate Director, 2017-present, Center for Self-Assembly and Complexity, IBS Head, 2007-2017, Laboratory of Bioimaging Probe Development, SBIC, A*STAR Professor, 2012-2017, Chemistry, National University of Singapore Director, 2007-2017, Medicinal Chemistry Program, National University of Singapore High Impact Research (HIR) Icon to the University of Malaya, 2014-2015 Associate Professor, 2007-2011, Chemistry, National University of Singapore Associate professor, 2005- 2007, NYU Chemistry Assistant Professor, 2000-2005, NYU Chemistry Post-Doc, 1999-2000, The Scripps Research Institute Post-Doc, 1997-1999, UC Berkeley Ph.D. in Chemistry, 1995-1997, POSTECH M.S. in Chemistry, 1993-1995, POSTECH (Army Service in Korean Army, 1991-1993) B.S. in Chemistry, 1987-1991, POSTECH

Selected Publications

Unraveling the mode of action of a neuron-specific fluorescent probe, NeuO: Intracellular phosphorylation through PAK6 kinase, Kim, B.*; Ko, D.; Kim, S. B.; Kim, S. Kim, M.; Hong, N. K.; Park, S. Y.; Kim, W.; Lee, B. C.; Lee, Y.; Sim, T.; Chang, Y. T.* *Angew. Chem. Int. Ed. Engl.* 2025, 64: e2024

Oxaborole-Functionalized Sialylated Glycan Probe for High-Fidelity Fluorescence Imaging of Cancer Tissue, Ko, K.; Gao, M.; Sarkar, S.; Kwon, H. Y.; Chang, Y. T.* *J. Am. Chem. Soc.* 2025, 147(23), 19718-19726

Super-Photostable Organic Dye for Long-Term Live-cell Single Protein Imaging, Kim, D. H.*; Triet, H. M.; Lee, S. H.; Jazani, S.; Jang, S.; Abedi, S. A. A.; Xiagang, L.; Seo, J.; Ha, T.; Chang, Y. T.*; Ryu, S. H.* *Nat. Methods*, 2025, 22(3), 550-558

A Pair of Fluorescent Probes Enabling Precise Diagnosis of Liver Cancer by Complementary Imaging, Gao, M.; Lee, S. H.; Kwon, H. Y.; Ciaramicoli, L. M.; Jo, E.; Yu, Y. H.; Li, F.; Kim, B.; Hong, K.; Lee, J. S.; Kim, N.; Oh, Y.; Im, C. Y.; Tan, C. S. H.*; Ha, H. H.*; Chang, Y. T.* *ACS Cent. Sci.* 2025, 11(1), 76-83.

Atom Efficient Synthesis of Trimethine Cyanines Using Formaldehyde as a Single Carbon Source, Lee, S. H.; Lee, T. J.; Sarkar, S.; Cho, H.; Pham, Q. N. N.; Chang, Y. T.* *Angew. Chem. Int. Ed. Engl.* 2025, 64 (1): e202413121

NeuM: A Neuron-Selective Probe Incorporates into Live Neuronal Membranes via Enhanced Clathrin-Mediated Endocytosis in Primary Neurons, Sung, Y.; Gotina, L.; Kim, K. H.; Lee, J. Y.; Shin, S.; Aziz, H.; Kang, D. M.; Liu, X.; Hong, N. K.; Lee, H. G.; Lee, J. S.; Ku, H.; Jeong, C.; Pae, A. N.; Lim, S.*; Chang, Y. T.*; Kim, Y. K.* *Angew. Chem. Int. Ed. Engl.* 2024, 63(3), e202312942.

Theranostics application of tumor-initiating cell probe TiY in non-small cell lung cancer, Lee, Y. A.; Lek, C. C. J.; Rong, G. Wu, Z; Shathishwaran, S.; Lee, J. H. J.; Tam, W. L.; Wuestefeld, T.; Park, S. J.; Jung, S.; Kim, B.; Kang, N. Y.*; Chang, Y. T.* *Theranostics* 2023, 13, 1370-1380.

Development of a Fluorescent Probe for M2 Macrophages via Gating-Oriented Live-Cell Distinction, Cho, H.; Kwon, H. Y.; Lee, S. H.; Lee, H. G.; Kang, N. Y.*; Chang, Y. T.* *J. Am. Chem. Soc.* 2023, 145, 2951-2957.

My lab can offer...

Unique chance to study aging and reverse aging using chemical tools and fluorescent imaging