

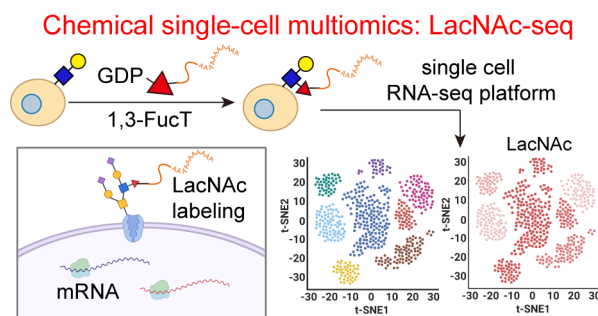
Chemical decoding and manipulation of T cell recognition and response

Jie P. Li*

Chemistry and Biomedicine Innovation Center (ChemBIC), School of Chemistry and Chemical Engineering, Nanjing University, Nanjing 210023, China
E-mail: jieli@nju.edu.cn

Immune recognition is governed by specific ligand-receptor interactions as well as the physiological state of T cells. Understanding the rules of immune recognition is of great importance for both basic and translational research in immunology. In collaboration with other groups, we are developing chemical platforms of FucOLD, PhoXCELL and LacNAc-seq to identify antigen-specific T cells and to profile the metabolic state of T

cells. With genetic manipulation-free procedures and a rapid turnover cycle, these platforms should have the potential to accelerate the discovery of T cell immunology as well as the pace of personalized cancer treatment. In summary, our work focus on the development of chemical tools to provide unique tools and novel insights for immunological research.



Insert Figure Representative example of chemical single-cell sequencing for T-cell function decoding.

References

- Liu Z, Li J*, Chen M, Wu M, Shi Y, Li W, Teijaro J, Wu P*, *Cell*, **2020**, 183, 1117–1133.
- Liu H, Luo H, Xue Q, Qin S, Qiu S, Liu S, Lin J, Li J*, Chen P*, *J. Am. Chem. Soc.*, **2022**, 144, 5517–5526.
- Qiu S, Zhao Z, Wu M, Xue Q, Yang Y, Ouyang S, Li W, Zhong L, Wang W, Yang R, Wu P*, Li, J*, *Sci. Adv.*, **2022**, 8, eadd2337.
- Yu W, Zhao X, Jalloh A, Zhao Y, Dinner B, Yang Y, Ouyang S, Li Y, Tian T, Zhao Z, Yang R, Chen M, Lauvau G, Guo Z*, Wu P*, Li J*, *J. Am. Chem. Soc.*, **2023**, Accepted
- Wu Q, Xue Q, Li J, Zheng Q, Zhao X, Li W, Sun S, Sha W, Yang Y, Yang Y, Li J*, *CCS. Chem.*, **2023**. DOI:10.31635/ccschem.022.202202386



Jie P. Li. Wuhan University (BS, 2010, Aiwen Lei), Peking University (Ph.D., 2015, Peng R. Chen), Scripps Research Institute (Postdoc, 2015-2019, Barry Sharpless & Peng Wu), Nanjing University (Professor, 2019-present). You can add more information on your career hear. [Chemical Immunology]: 1) chemical decoding and remodeling of immune recognition; 2) single-cell resolution cellular interatome of immune microenvironment; 3) immune function of metal elements; 4) novel immune drugs or cellular therapies.