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主要研究模式植物（拟南芥和水稻）与微生物相互作用的分子机制、以及环境因子对植物抗病性的影响，以期作为作物抗病提供新策略。前期研究发现了多聚腺苷酸二磷酸核糖化修饰（PARylation）调控植物免疫的重要功能，应用蛋白质芯片鉴定了第一批植物中PARylation底物蛋白。近期发现了单腺苷核糖化（MARylation）与泛素化修饰相互作用调节植物免疫。在Molecular Cell, EMBO Reports, PLoS Genetics, PLoS Pathogens, Plant Journal等国际主流期刊共发表SCI论文20余篇。

研究方向

1. 植物免疫受体激活机制：植物主要依赖模式识别受体和胞内抗病蛋白感知病原微生物的入侵，我们在应用生化和遗传方法探索免疫受体激活并诱导防御反应的机制。
2. 腺苷二磷酸核糖化在植物-病原互作中的功能：以NAD⁺为底物的腺苷二磷酸核糖化反应不仅是病原的致病武器，也是植物宿主的防御机制。我们鉴定了植物中此类修饰的底物蛋白，并发现了植物免疫过程中此类修饰调节基因转录、蛋白翻译的现象，将继续探索在植物-病原（水稻-稻瘟菌）互作中此修饰的生物功能与机制
3. 植物系统获得抗性：植物在局部受到病原侵染后产生移动信号，通过远距离通讯指导未侵染组织建立防御机制，即系统获得抗性。我们研究植物感知系统抗性信号分子并激发免疫反应的过程

承担课题

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2. 国家自然科学基金面上项目, 2018.01-2021.12, 60万元, 主持

学习与工作经历

2017.07至今福建农林大学海峡联合研究院教授、博士生导师

2012-2017德克萨斯农工大学博士后

2008-2012加州大学伯克利分校博士后

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2002德国马普学会访学

1994-1998山东大学生命科学院学士

发表文章

1. Kong L*, Feng B*, Yan Y, Zhang C, Kim J, Xu L, Rack, Wang Y, Jang J, Ahel I, Shan L, and He P. (2021) Noncanonical mono(ADP-ribosylation) of zinc finger SZF proteins counteracts ubiquitination for protein homeostasis in plant immunity. *Molecular Cell*, **81**:1-14 (*Co-first author)
2. Liu, J., Y. Huang, L. Kong, X. Yu, B. Feng, D. Liu, B. Zhao, G. C. Mendes, P. Yuan, D. Ge, W. M. Wang, E. P. B. Fontes, P. Li, L. Shan and P. He (2020). The malectin-like receptor-like kinase LETUM1 modulates NLR protein SUMM2 activation via MEKK2 scaffolding. *Nat Plants* **6**(9): 1106-1115
3. Huang, Y., C. Yin, J. Liu, B. Feng, D. Ge, L. Kong, F. A. Ortiz-Morea, J. Richter, M. T. Hauser, W. M. Wang, L. Shan and P. He (2020). A trimeric CrRLK1L-LLG1 complex genetically modulates SUMM2-mediated autoimmunity. *Nat Commun* **11**(1): 4859.
4. Wang, W., B. Feng, J. M. Zhou and D. Tang (2020). Plant immune signaling: Advancing on two frontiers. *J Integr Plant Biol* **62**(1): 2-24
5. Yang, Y., J. Liu, C. Yin, L. de Souza Vespoli, D. Ge, Y. Huang, B. Feng, G. Xu, A. Manhaes, S. Dou, C. Criswell, L. Shan, X. Wang and P. He (2020). RNA Interference-Based Screen Reveals Concerted Functions of MEKK2 and CRCK3 in Plant Cell Death Regulation. *Plant Physiol* **183**(1): 331-344.
6. Feng, B. and D. Tang (2019). Mechanism of plant immune activation and signaling: Insight from the first solved plant resistosome structure. *J Integr Plant Biol* **61**(8): 902-907
7. Gao, X*, X. Ruan, Y. Sun, X. Wang and B. Feng* (2018). BAKing up to Survive a Battle: Functional Dynamics of BAK1 in Plant Programmed Cell Death. *Front Plant Sci* **9**: 1913. (co-corresponding authors)
8. Mang, H., B. Feng, Z. Hu, A. Boisson-Dernier, C. M. Franck, X. Meng, Y. Huang, J. Zhou, G. Xu, T. Wang, L. Shan and P. He (2017). Differential Regulation of Two-Tiered Plant Immunity and Sexual Reproduction by ANXUR Receptor-Like Kinases. *Plant Cell* **29**(12): 3140-3156.
9. Yu, X., B. Feng, P. He and L. Shan (2017). From Chaos to Harmony: Responses and Signaling upon Microbial Pattern Recognition. *Annu Rev Phytopathol* **55**: 109-137.
10. Feng, B., S. Ma, S. Chen, N. Zhu, S. Zhang, B. Yu, Y. Yu, B. Le, X. Chen, S. P. Dinesh-Kumar, L. Shan and P. He (2016). PARylation of the forkhead-associated domain protein DAWDLE regulates plant immunity. *EMBO Rep* **17**(12): 1799-1813.
11. Yadeta, K. A., J. M. Elmore, A. Y. Creer, B. Feng, J. Y. Franco, J. S. Rufian, P. He, B. Phinney and G. Coaker (2017). A Cysteine-Rich Protein Kinase Associates with a Membrane Immune Complex and the Cysteine Residues Are Required for Cell Death. *Plant Physiol* **173**(1): 771-787.
12. Feng, B., C. Liu, L. Shan and P. He (2016). Protein ADP-Ribosylation Takes Control in Plant-Bacterium Interactions. *PLoS Pathog* **12**(12): e1005941.
13. Feng, B., C. Liu, M. V. de Oliveira, A. C. Intorne, B. Li, K. Babilonia, G. A. de Souza Filho, L. Shan and P. He (2015). Protein poly(ADP-ribosylation) regulates arabidopsis immune gene expression and defense responses. *PLoS Genet* **11**(1): e1004936.
14. Feng, B. and L. Shan (2014). ROS open roads to roundworm infection. *Sci Signal* **7**(320): pe10.
15. Cheng, C., X. Gao, B. Feng, J. Sheen, L. Shan and P. He (2013). Plant immune response to pathogens differs with changing temperatures. *Nat Commun* **4**: 2530
16. Feng, B., D. Lu, X. Ma, Y. Peng, Y. Sun, G. Ning and H. Ma (2012). Regulation of the Arabidopsis anther transcriptome by DYT1 for pollen development. *Plant J* **72**(4): 612-624.
17. Ma, X., B. Feng and H. Ma (2012). AMS-dependent and independent regulation of anther transcriptome and comparison with those affected by other Arabidopsis anther genes. *BMC Plant Biol* **12**: 23.
18. Hu, W., B. Feng and H. Ma (2011). Ectopic expression of the Arabidopsis MINI ZINC FINGER1 and MIF3 genes induces shoot meristems on leaf margins. *Plant Mol Biol* **76**(1-2): 57-68
19. Feng, B., L. Li, X. Zhou, B. Stanley and H. Ma (2009). Analysis of the Arabidopsis floral proteome: detection of over 2 000 proteins and evidence for posttranslational modifications. *J Integr Plant Biol* **51**(2): 207-223.
20. Zahn, L. M., B. Feng and H. Ma (2006). Beyond the ABC-Model: Regulation of Floral Homeotic Genes. *Advances in Botanical Research*. Academic Press. **44**: 163-207
21. Zhang, X., B. Feng, Q. Zhang, D. Zhang, N. Altman and H. Ma (2005). Genome-wide expression profiling and identification of gene activities during early flower development in Arabidopsis. *Plant Mol Biol* **58**(3): 401-419.
22. Ni, W., D. Xie, L. Hobbie, B. Feng, D. Zhao, J. Akkara and H. Ma (2004). Regulation of flower development in Arabidopsis by SCF complexes. *Plant Physiol* **134**(4): 1574-1585.
23. Zhao, D., W. Ni, B. Feng, T. Han, M. G. Petrasek and H. Ma (2003). Members of the Arabidopsis-SKP1-like gene family exhibit a variety of expression patterns and may play diverse roles in Arabidopsis. *Plant Physiol* **133**(1): 203-217.