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Title

Effector-triggered immunity

Summary

The initial detection of an invading pathogen by the innate immune system is the first critical step in any protective immune response. In animals, the dominant mechanism for sensing pathogens involves pattern recognition receptors that bind directly to specific microbial molecules such as flagellin and LPS (sometimes referred to as PAMPs). In my talk, I will discuss our work on an alternative strategy for sensing pathogens that does not involve PAMPs. This strategy is called “Effector-triggered immunity” (ETI). ETI is based on an appreciation that pathogens are more than just a “bag of PAMPs” — indeed, to establish their niche within their hosts, pathogens must manipulate their hosts with specific virulence factors, also called effectors. During ETI, effectors are not directly detected with pattern recognition receptors; instead, the activities of effectors on the host are sensed indirectly. I will illustrate ETI by discussing three examples of ETI pathways we have studied in the lab: the MORC3 pathway, the SP140 pathway, and the NYN pathway.