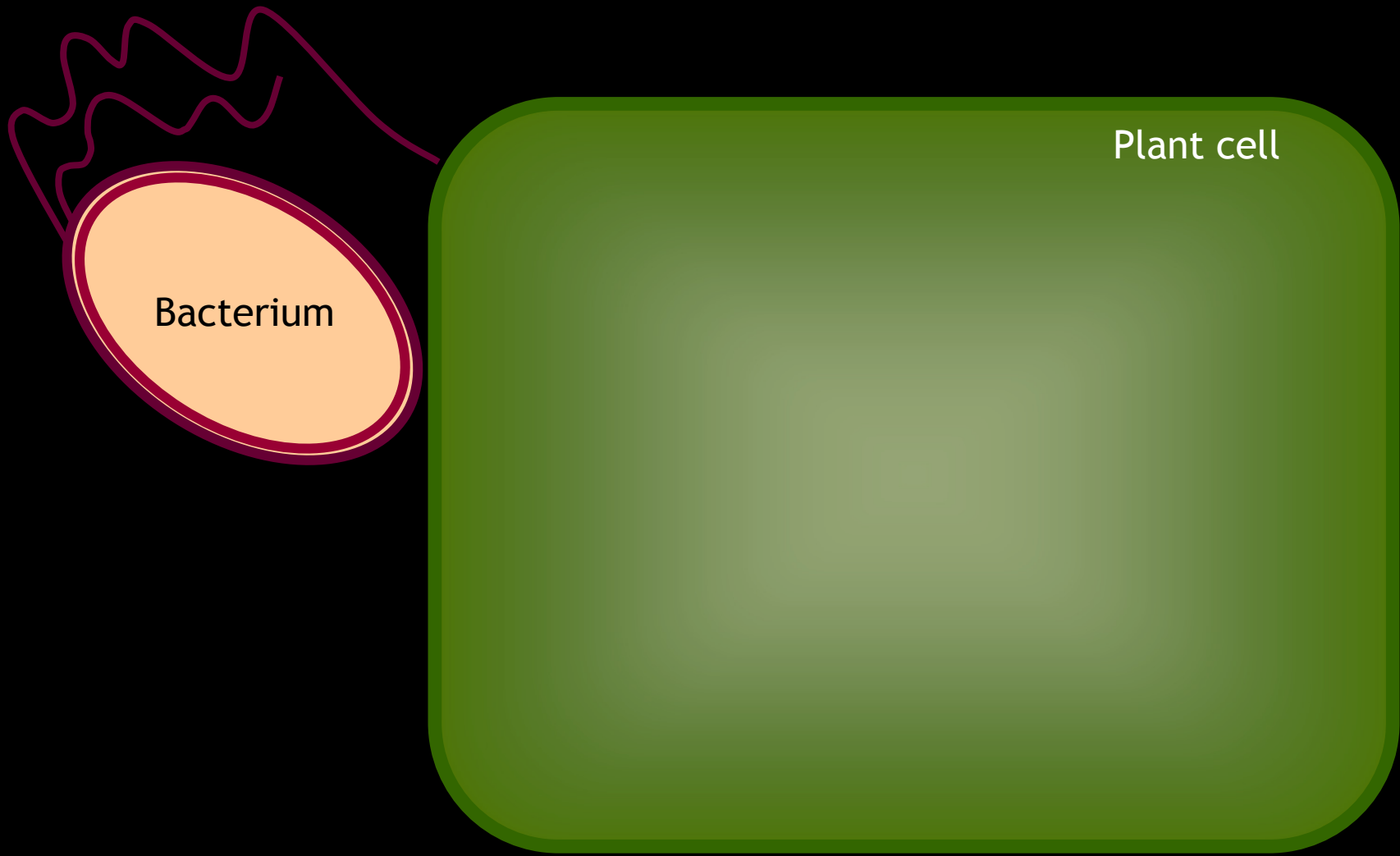
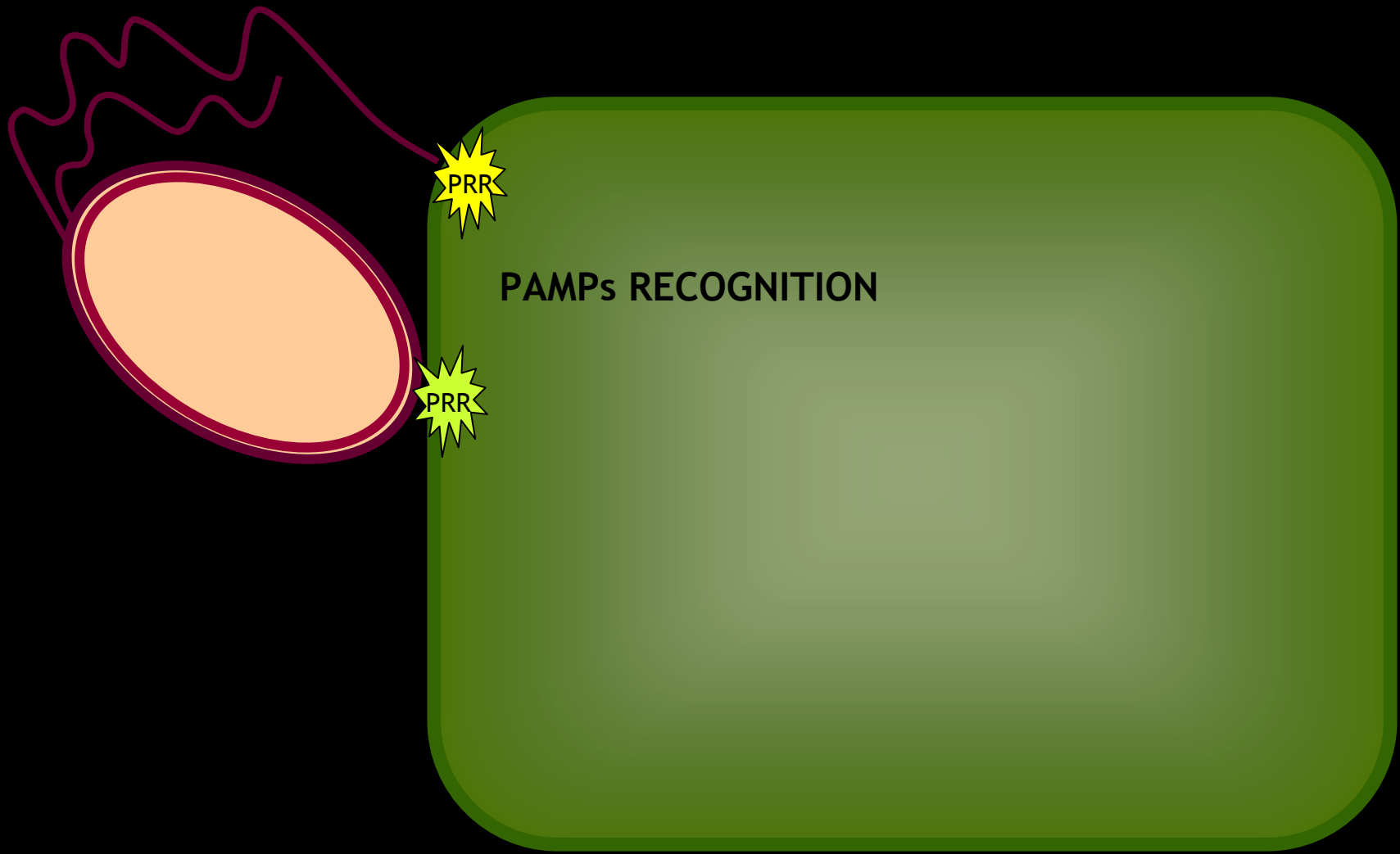
How do plants fight bacteria ?

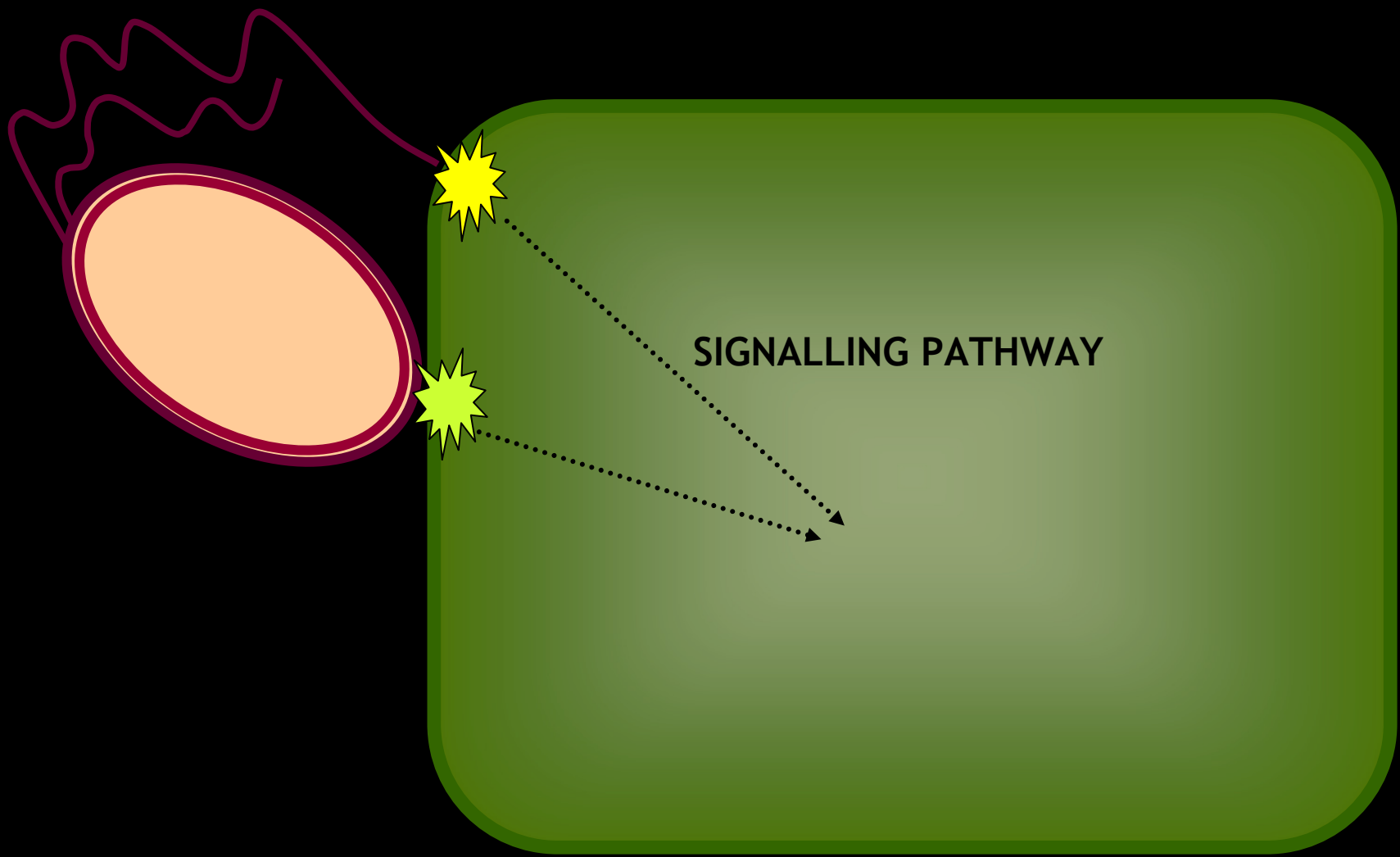
When bacteria get in contact with plant cells…



. . . Plant cells detect bacterial molecules (PAMPs) thanks to receptors called PRR

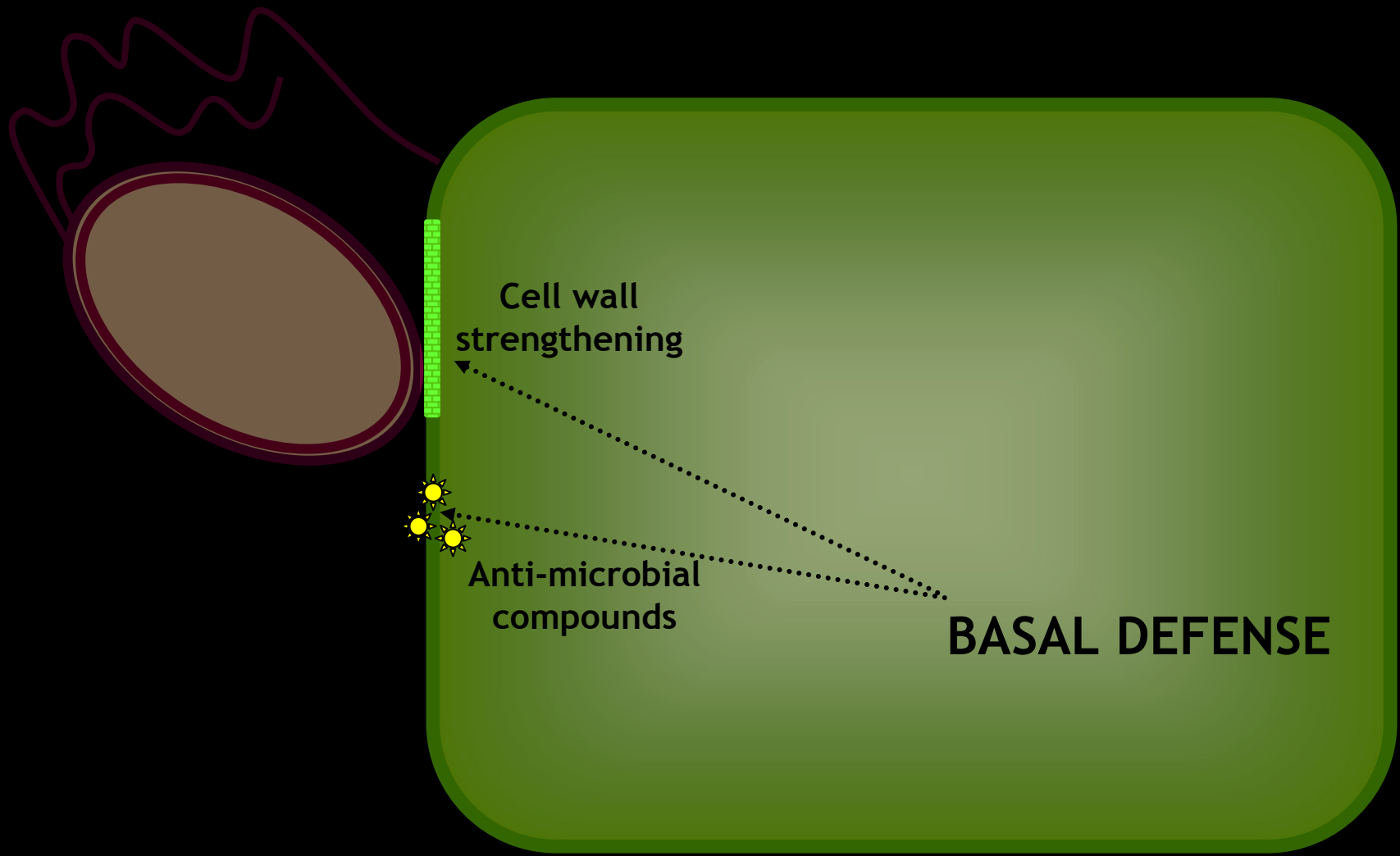


A signaling pathway named PTI (PAMP-Triggered-Immunity) is activated

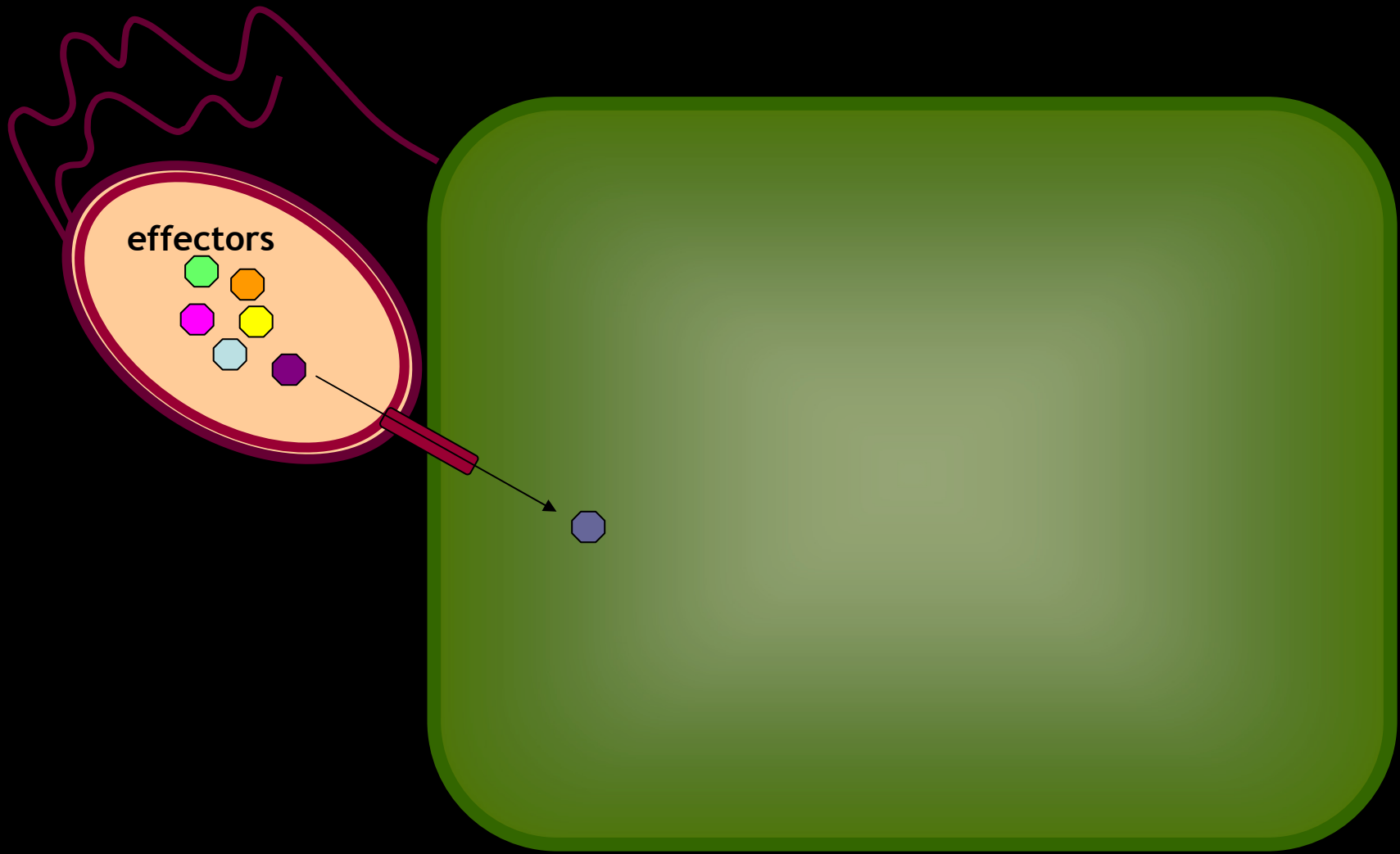


Molecular events occur and stop bacterial growth:

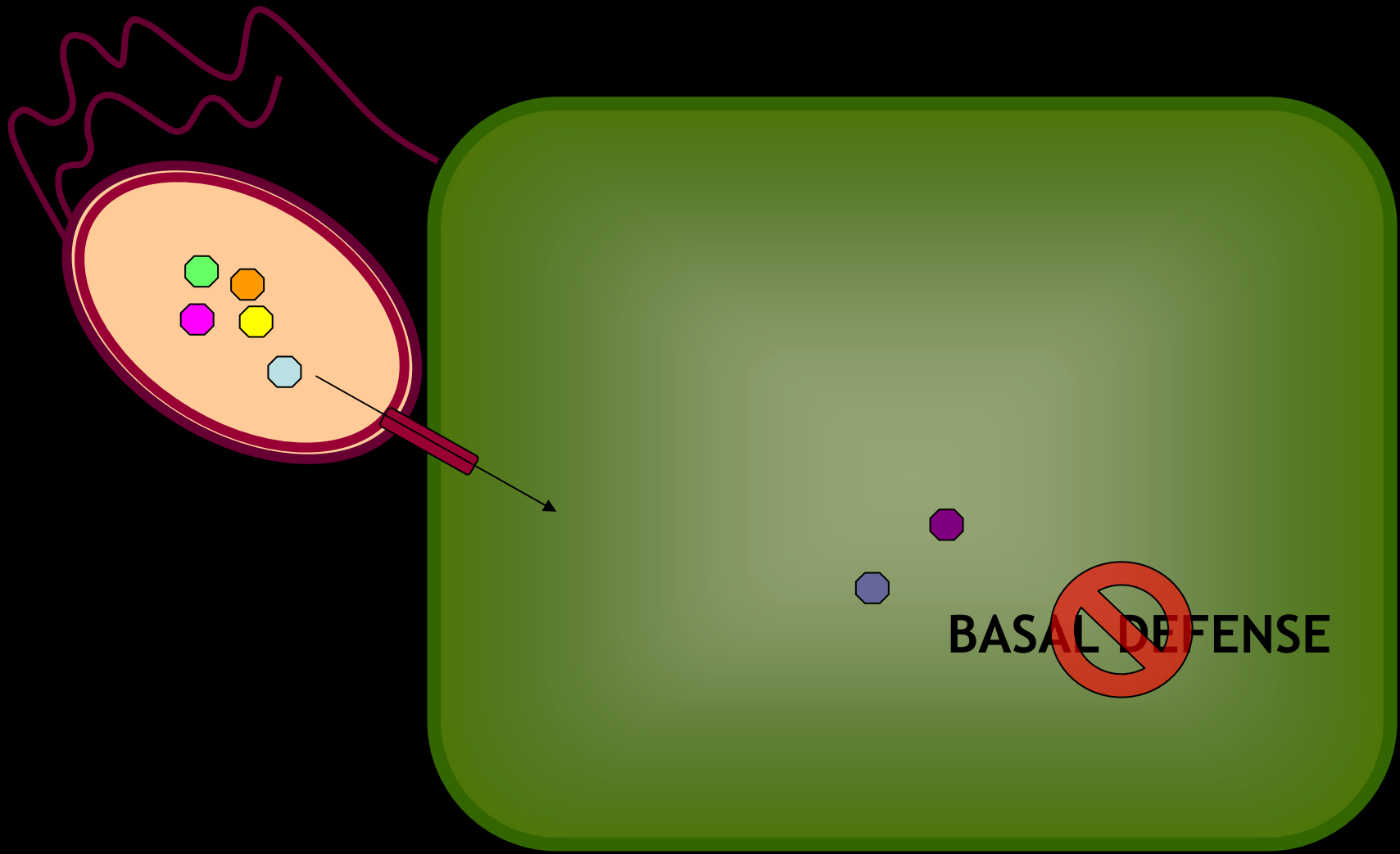
this is called PTI (or Basal Defense)



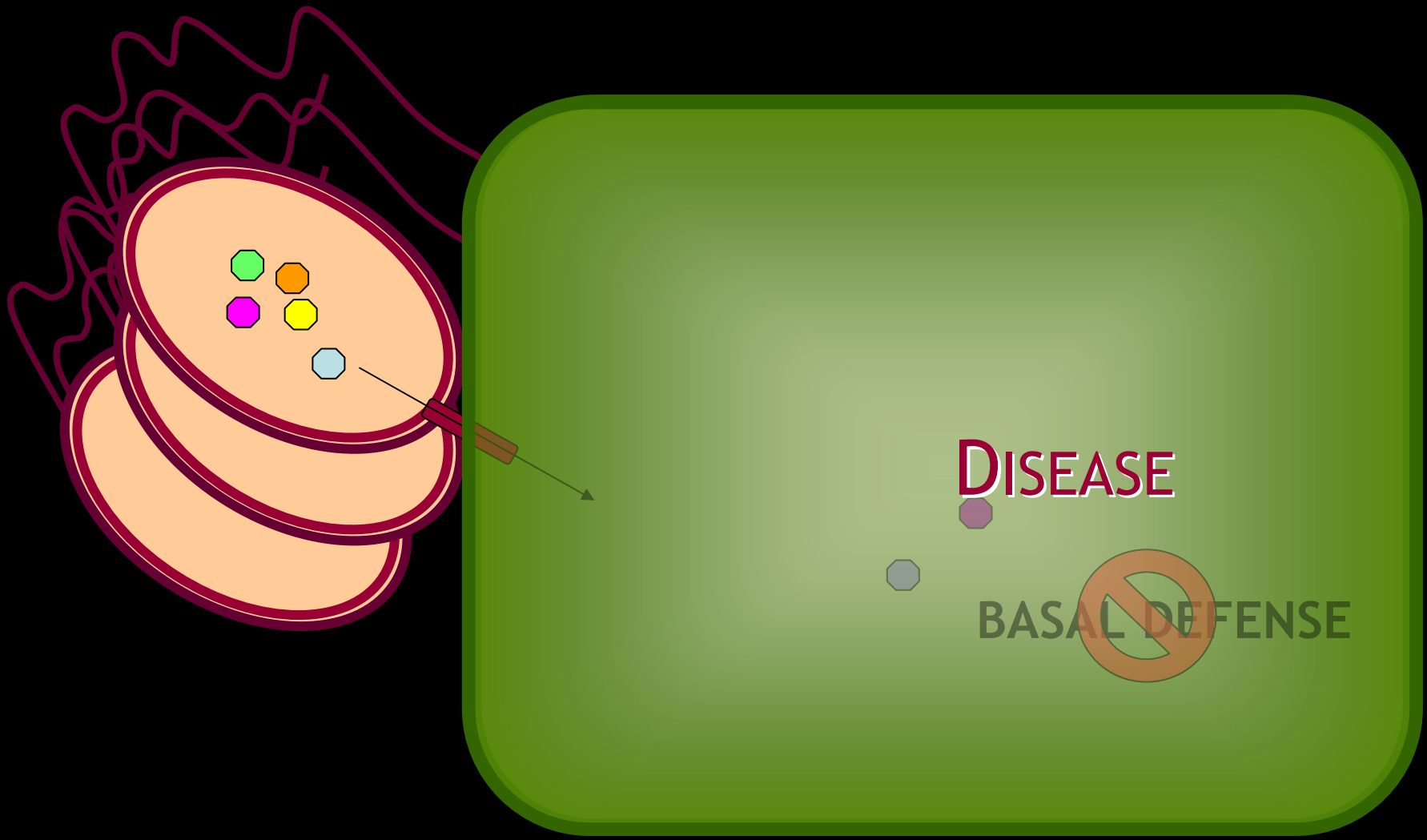
Bacteria often have a Type III Secretion System allowing them to inject proteins (called “effectors”) directly into plant cells



Some effectors can suppress the host basal defense

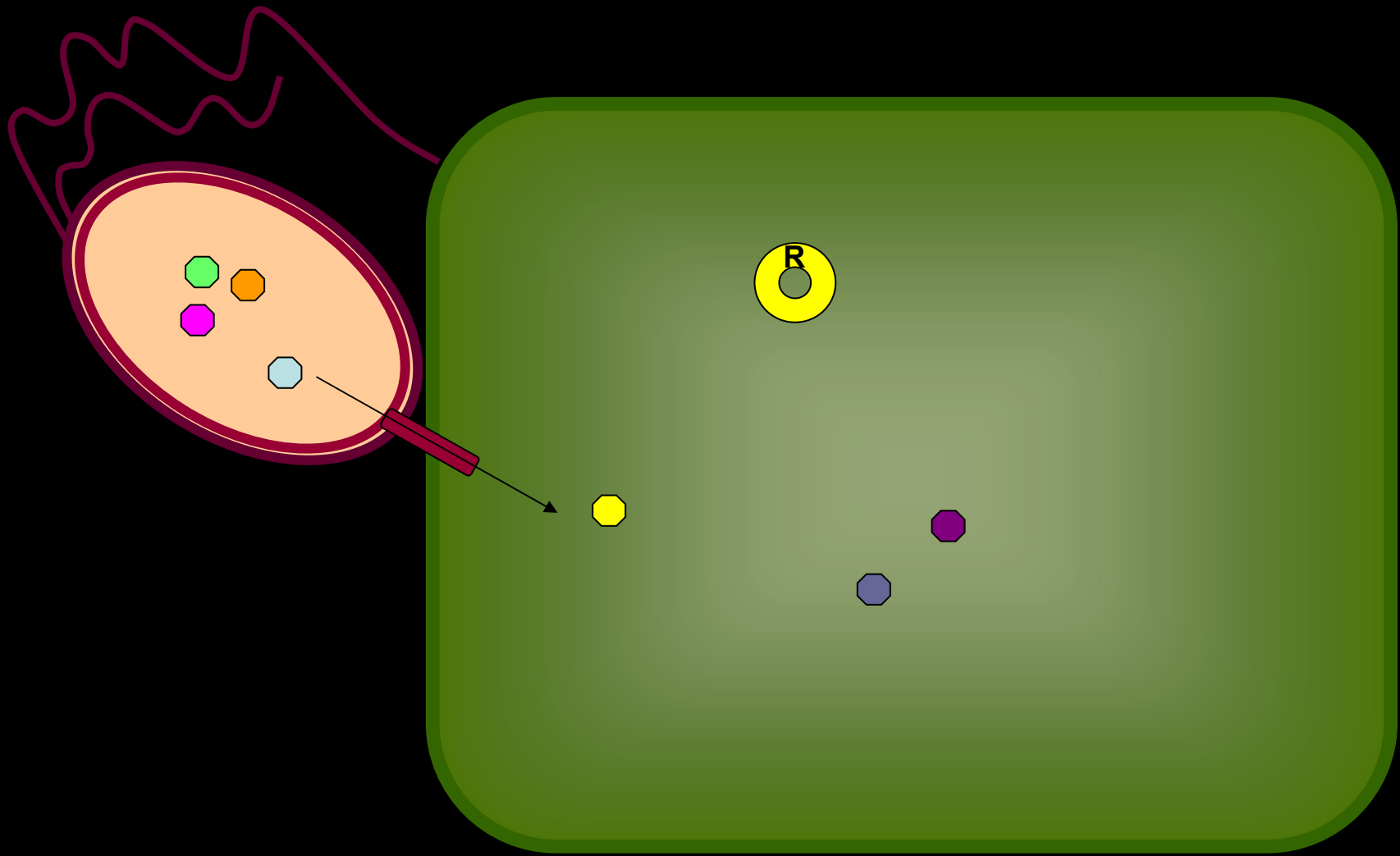


If basal defense is suppressed, then bacterial growth is not inhibited, and disease develops

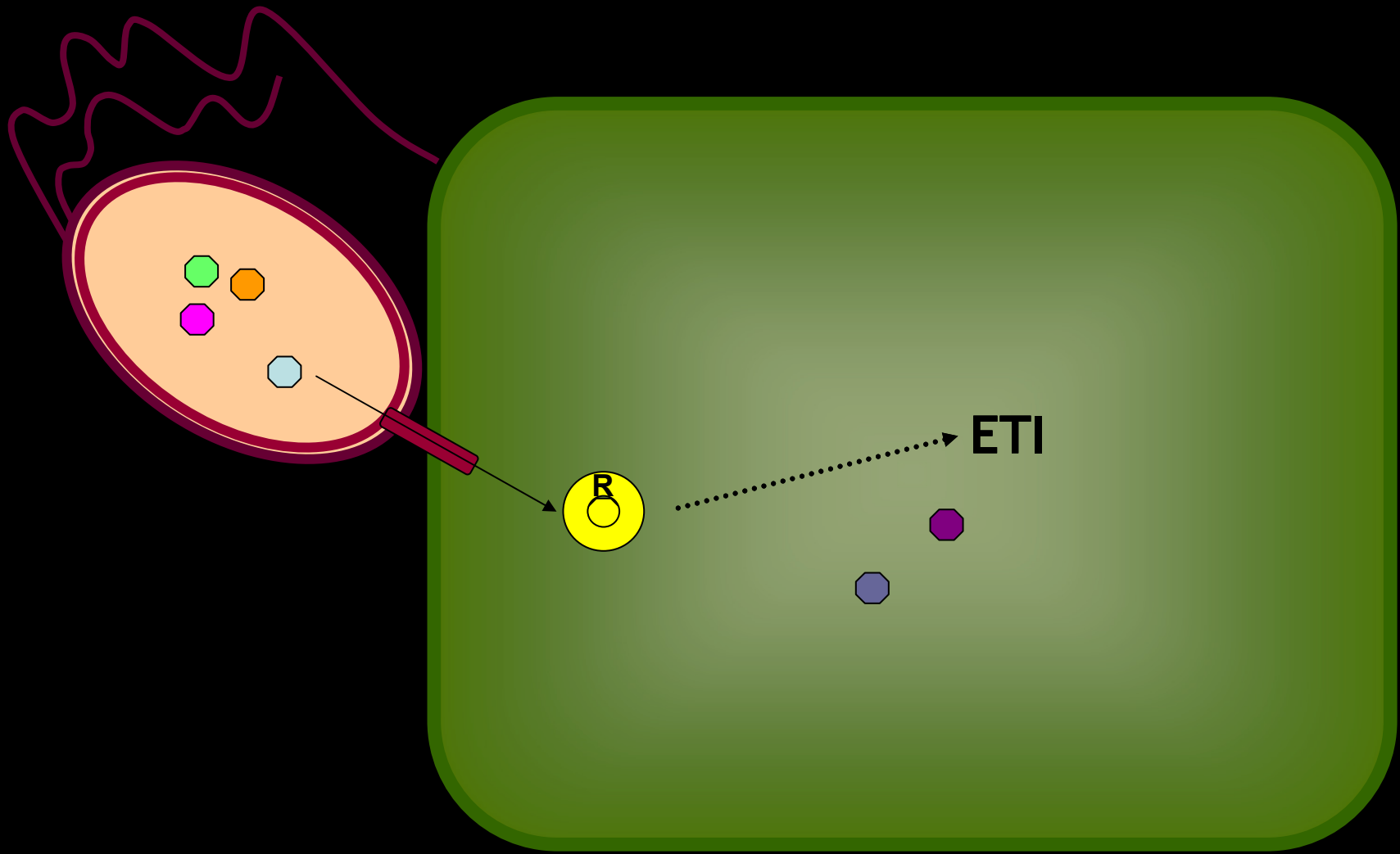


Plant cells have proteins that can recognize effectors

They are called Resistance proteins (R) and are specific to one effector



A signaling pathway named ETI (Effector-Triggered-Immunity) is activated



If ETI is activated, the Hypersensitive Response occurs (HR) and stops bacterial growth:

The plant is resistant to the bacterium