

T H E
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ON THE COVER



A cyst nematode has penetrated an *Arabidopsis* root and is migrating intracellularly in search of a primary feeding cell where it will induce the formation of a syncytium that will serve as the nematode's feeding site. Cyst nematodes are damaging plant pathogens that pose significant threats to sustainable crop production. Note the stylet, a hollow mouth spear, that allows the delivery of protein effectors into host cells to mediate formation of the syncytium. Vijayapalani et al. (2795–2812) have shown that effector 32E03 is important for cyst nematode parasitism. Interestingly, this effector binds to plant histone deacetylase HDT1 and histone chaperone FKBP53 in the host plant nucleus/nucleolus and both these interacting proteins have documented functions in rDNA regulation. The authors have shown that 32E03 modulates rDNA chromatin by inhibiting histone deacetylases, thereby derepressing rRNA expression. Thus, the 32E03 effector epigenetically regulates plant gene expression to promote cyst nematode parasitism. Photo by Tom Maier, Iowa State University.

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15501 Monona Drive
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