

T H E
PLANT
C E L L

Volume 30 Number 11 November 2019

The electronic form of this issue, available at www.plantcell.org, is the journal of record.

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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Rockville, Maryland 20855-2768
Telephone: 301/296-0908

Online at www.plantcell.org

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[OPEN] Articles can be viewed without a subscription.



The Plant Cell (eISSN 1532-298X) is published monthly (one volume per year) by the American Society of Plant Biologists, 15501 Monona Drive, Rockville, MD 20855-2768, and is produced by Dartmouth Journal Services, Waterbury, VT. The institutional subscription price is based on type of institution; contact institution@aspb.org. Members of the American Society of Plant Biologists may subscribe to *The Plant Cell* for \$240. Nonmember individuals may subscribe for \$500. Students may subscribe for \$165. For matters regarding subscriptions, contact Suzanne Cholwek, ASPB, 15501 Monona Drive, Rockville, MD 20855-2768; telephone 301/296-0926; fax 301/251-6740; e-mail scholwek@aspb.org. Send all inquiries regarding display advertising to FASEB AdNet, 9650 Rockville Pike, Bethesda, MD 20814-3998; telephone 301/634-7791; fax 301/634-7153; e-mail adnet@faseb.org. The online version of *The Plant Cell* is available at www.plantcell.org.

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