

T H E  
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**ON THE COVER**



Establishment of symbiosis between nitrogen-fixing rhizobia and legume plants depends on lipochitooligosaccharides, called Nod factors. These bacterial nodulation signals are rapidly hydrolyzed by host enzymes. Cai et al. (pages 397–414) have identified a symbiotic function for such a Nod factor cleaving enzyme (MEDICAGO TRUNCATULA NOD FACTOR HYDROLASE1 [MtNFH1]). MtNFH1 plays a role in the fine-tuning of the symbiosis at the stage of rhizobial root infection and in nitrogen-fixing nodules. *M. truncatula* mutant plants deficient in MtNFH1 display delayed rhizobial root hair infection, nodule hypertrophy, and abnormal nodule branching. Such nodule branching was also observed for wild-type plants inoculated by a Nod factor overproducing *Sinorhizobium meliloti* strain. The cover image depicts clustered nodules formed on roots of the MtNFH1-deficient mutant *nfh1-3* (20 d postinoculation with *S. meliloti* wild-type bacteria).

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**Editorial Office**  
15501 Monona Drive  
Rockville, Maryland 20855-2768  
Telephone: 301/296-0908

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