NMR INVESTIGATION OF THE 3D STRUCTURE OF THE NODULATION FACTORS

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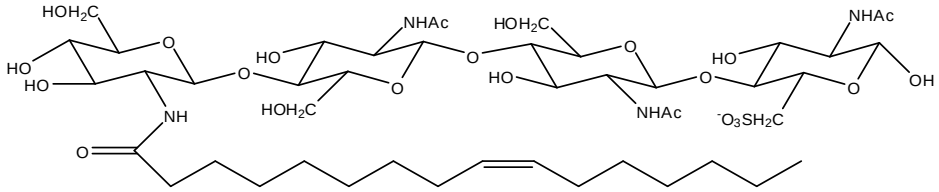
The Legume-Rhizobia symbiosis involves a single plant phylogenetic group (the family Leguminosae) and a collection of philogenetically diverse nitrogen fixing bacteria (termed rhizobia). Compatible partners lead to root nodulation, infection and symbiotic nitrogen fixation. On the bacterial side the ability to estabilish the symbiosis is due to genes specific to the production of Nod factor signals, which are lipochitoligosaccharides, active on the legume hosts at pico-nano molar concentrations. On the plant side, genes that are involved in Nod factor perception encode receptor like kinases with LysM domains.



Nod-Factor target

A new generation of Nod factor analogues [1,2], with affinities in the nanomolar range, has been recently synthesised and their conformational behaviour has been studied by NMR and Dynamic Simulations.

[1] Beau et al. *Angew. Chem. Int. Ed.* **2004,** 43, 4644 –4646
[2] Groves et al. *OBC* **2005**, 3, 381-1386

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