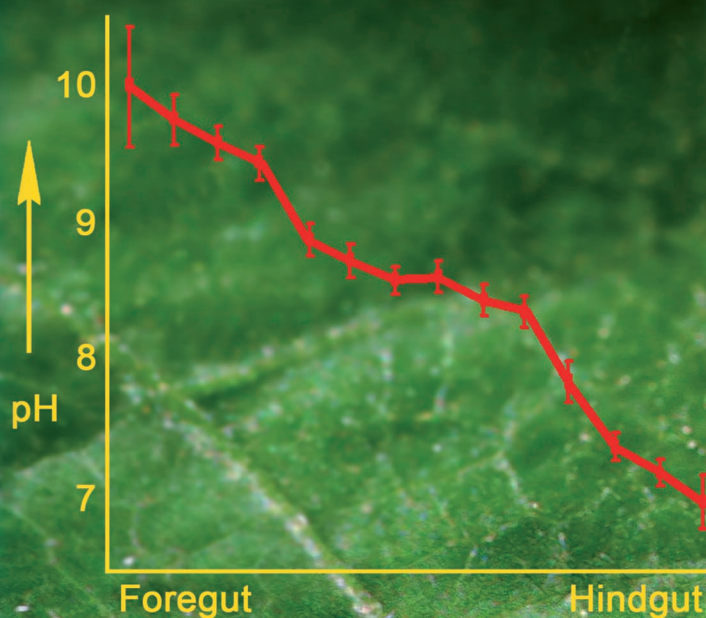
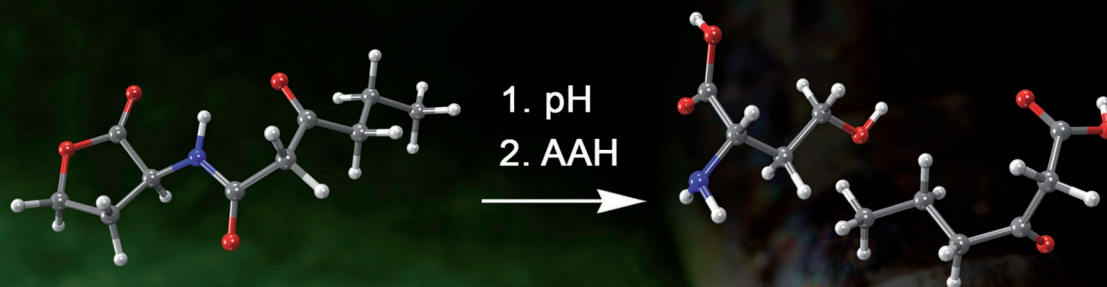


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pH-Promoted Degradation of Bacterial Autoinducers in the Gut of *Spodoptera* Larvae



12/2008

Chemistry & Life Sciences

Minireview: Biochemistry of PUFA Double Bond Isomerases

(I. Feussner)

Concept: Artificial Riboswitches

(J. Hartig)



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Cover Picture

Yvonne Thielmann, Jeannine Mohrlüder, Bernd W. Koenig*, Thomas Stangler, Rudolf Hartmann, Karin Becker, Hans-Dieter Höltje, and Dieter Willbold*

The cover picture shows a caterpillar of the cotton leaf worm *Spodoptera littoralis* feeding on a leaf of the lima bean (*Phaseolus lunatus*). Microelectrode studies showed that the larval gut milieu is strongly alkaline ($\text{pH} \approx 8.5\text{--}10.0$) in the fore- and midgut, descending to $\text{pH} 7.0$ in the hindgut. Due to the alkaline milieu in the fore- and midgut, the lactone ring of bacterial autoinducers such as *N*-acylhomoserinelactones (AHLs) is rapidly opened. Further degradation to the inactive components homoserine and the acyl moiety (short-to-medium-chain fatty acids and their 3-oxo or 3-hydroxy derivatives) is then achieved by a microbial *N*-acylamino acid hydrolase (AAH) and/or related enzymatic activities in the insect gut. The alkaline milieu in combination with the enzymatic degradation might account for the complete absence of AHLs in the intestinal fluid of the studied *Spodoptera* spp. For more details see the article by W. Boland et al. on p. 1953 ff.

