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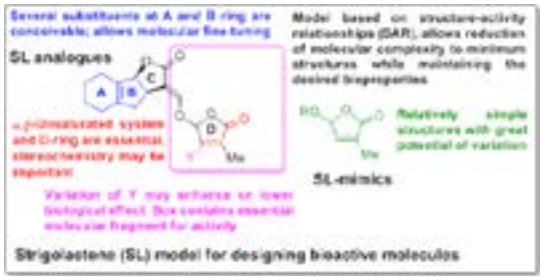
Strigolactones, new plant hormones with a rich future: True challenges for organic chemists

Binne Zwanenburg
Radboud University Nijmegen, Netherlands

Parasitic weeds have a devastating impact on the development of the host plants. When agriculturally important crops are involved, the food production may be severely affected, which often is the case in tropical and semi-tropical areas in Africa and Asia. The lifestyle of the root parasites is extremely well adapted to that of their host plants. Abundant evidence is available that strigolactones (SLs) are the true stimulants for germination of seeds of parasitic weeds. Over the years our research program focused on the chemistry and structure-activity relationship of germination stimulants for parasitic weeds. In this lecture, recent advances in this area will be presented: New bioactive strigolactone analogues, new bioactivities of SLs, new SL mimics. Challenges are to understand the mode of action of SLs and how to apply SL analogues in the field to control parasitic weeds. As SLs are now considered as new plant hormones, it is relevant to compare structure activity relationship for various bio-functions and how suitable structurally simpler analogues can be designed and prepared.



Biography

Binne Zwanenburg is working as a Senior Professor of Organic Chemistry at Radboud University Nijmegen, Institute for Molecules and Materials, Department of Organic Chemistry, The Netherlands. He had a consultancy on Molecular Chemistry (ChemZet). His research interests include organic sulfur chemistry, heterocyclic chemistry, strained polycyclic systems, natural products, new catalyst, germination stimulant, structure-activity relationships of biomolecules and synthetic methodology. Currently, his concentration is on strigolactones, which are new plant hormones.

B.Zwanenburg@science.ru.nl

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