

Carlactone

A novel, natural and functional strigolactone with beneficial attributes for agricultural applications

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Technology

Strigolactones are a group of phyto-compounds known to stimulate seed germination of parasitic plants, induce hyphal growth of symbiotic fungi and function as phyto-hormones.

Every known strigolactone function holds significant potential in agricultural applications. However, strigolactones, as well as their so far developed synthetic analogues, suffer from instability and preparation, especially on a larger scale, is rather laborious.

An identified novel precursor of all strigolactones, significantly more simple in structure but functional, could help to address these problems: "Carlactone". It was produced successfully *in vitro* by incubating respective recombinant plant enzymes with commercially available, cheap substrates and detailed experiments confirmed its activity as germination stimulant and as phyto-hormone.

Carlactone

- Novel, natural, ubiquitous, simple but functional strigolactone
- Expected to be more stable than strigolactones and their synthetic analogues (Proof ongoing)
- Biotechnological production feasible (In vitro or in production hosts, e.g. E. coli, yeasts, cyanobacteria or plants)
- Enables access to straightforward strigolactone analogues
 - highly effective
 - very stable (field conditions)
 - water soluble
 - easily and cost effectively synthesized

Agricultural applications

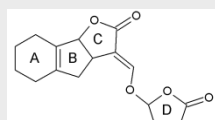
- Germination trap for parasitic weeds
- Regulation of branching, tillering and root development
- Enhancement of cambium growth
- Regulation of hyphal growth of mycorrhizal fungi
- In compositions with insecticides and/or fungicides

Market Potential

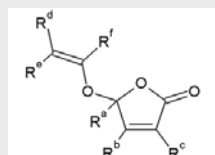
- Substantial commercial potential in the field of plant growth & protection and pest management. Root parasitic plants e.g. represent one of the main agricultural pest worldwide and the annual losses caused thereby are estimated to be in the multi-billion dollar range
- Supported by the implemented broad IP strategy

Stand: Jun-11

Strigolactones:



Carlactone:



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Green BioTech, Agrochemicals,
Plant Hormones

Patent Status

Filed April 28th 2011

Reference Number

ZEE20101214
ZEV20110329

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