

Technology

Cytokinins are plant hormones involved in cell division, shoot meristem and leaf formation, chloroplast biogenesis, and senescence. The development of agonists and antagonists with a particular physiological effect is useful in mechanism-of-action studies of biologically active natural products. The potent naturally occurring cytokinin N⁶-isopentenyladenine served as the basis for initial structure-activity studies. However, until recently, direct proof that cytokinin receptors are the sites of cytokinin-anticytokinin interactions was lacking, because no cytokinin receptors had been identified.

The present invention claims substituted 6-(alcybenzylamino)-purin derivatives as cytokinin receptor antagonists to provide cytokinin analogs for growth regulation in plants and to offer the possibility for a specific selectivity for cytokinin receptors without being toxic for animal cells. The derivatives can be used to influence morphology, leading to several application possibilities:

- Increase root growth
- Increase fruit or grain size
- Shorten germination period
- Enhance crop and quality of agricultural products
- Regulate proliferation and morphogenesis in tissue culture
- Cloning of embryonic plant and mammalian cells
- Production of growth regulating compounds

Competitiveness

- Non toxic for animal cells
- Efficiency is proven in various test systems

IP Rights

Czech patent application (PV 2007-691) filed on 5, October 2007.

PCT application filed on 3, October 2008.

Regionalization in 2010.

Origin

The invention was made at the Freie Universität Berlin (Germany) in cooperation with the Palack University Olomouc.

About ipal

The ipal GmbH (innovations, patents, licences) is financed by the Berlin universities FU, HU, TU, FHTW and TFH as well as the Investitionsbank Berlin (IBB). The patent exploitation agency assesses and markets the inventions of university scientists and academics on an exclusive basis. Based on cooperation agreements, the ipal GmbH will also work exclusively in the area of Life Sciences and Physics & Engineering for its highly competitive Berlin partners Charité-Universitätsmedizin (University Medicine), Robert Koch Institute, Deutsches Herzzentrum (German Heart Institute), Bundesanstalt für Materialprüfung (BAM – Federal Institute for Materials Research and Testing), the Zuse Institute as well as the Paul Ehrlich Institute, Langen and the Jacobs University Bremen.

- Suitable Industry
Agriculture
- Market Potential
Worldwide
- Development
Model plant Arabidopsis
- Type of collaboration
License

- Project Manager

Dr. Bettina Büttner
bettina.buettner@ipal.de
+49 (0) 30 2125 4835
+49 (0) 30 2125 4822

- Provider
ipal GmbH
Bundesallee 171
D-10715 Berlin
Germany
www.ipal.de