Identification Of New Synthetic Elicitors Of Plant Immune Responses

Tech ID: 25185 / UC Case 2011-097-0

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Issued Patent	9,622,472	04/18/2017	2011-097

IMAGES

Wikimedia Commons / https://commons.wikimedia.org/wiki/File:CSIRO_ScienceImage_10772_Rustaffected_wheat_seedlings.jpg

FULL DESCRIPTION

Background:

The global market for agricultural biotechnology is projected to reach $46.8B. What's encouraging this 11% industry growth over the next 4 years are pathogens. Pathogens are very adaptive, multifaceted and rapidly acquire new traits that enable their survival. One of their most notable traits is the ability to release effector molecules and suppress plant immunity, thereby increasing disease spread and infection. Plants, too, have evolved in their defense signaling networks but it is more effective to find a preventative measure, as more energy is expended when trying to recuperate from post-infection.

Brief Description:

UCR Researchers have identified new synthetic elicitors that are involved in the earlier stages of plant defense signaling. These compounds have a more extensive effect on plant immune responses than the existing synthetic elicitor, DCA. It has been successfully verified that the new compound exhibits higher

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OTHER INFORMATION

KEYWORDS

synthetic elicitor, plant immune system, plant immune response, DCA, defense signaling network, transgenic plants, pathogen resistance, plant pathogen, genetically modified plant

CATEGORIZED AS

- **Agriculture & Animal Science**
  - Plant Traits
  - Plant Varieties
  - Transgenics
- **Biotechnology**
  - Food
  - Genomics
- **Environment**
  - Other
- **Materials & Chemicals**
  - Agricultural
  - Biological
  - Chemicals
  - Pesticides and Insecticides
- **Research Tools**
  - Nucleic Acids/DNA/RNA
- **Security and Defense**
  - Food and Environment
  - Other

RELATED CASES

2011-097-0

potency in mediating disease resistance against harmful pathogens as well as enhance the plant's inherent defense system.

ADVANTAGES

- Better control of defense signaling network – new compound's regulatory step lies upstream of salicylic acid, the defense hormone in plants
- Biological activity is 10-fold higher
- Improved protection along with enhanced immune system & growth
- Complement or substitute pesticide use

SUGGESTED USES

- Development of disease-resistant plant lines
- Compounds can be formulated in various ways depending on necessity (e.g. liquid, powder, gas)

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