# Novel Artificial Vesicle Formulation to Deliver Anti-Fungal Gene Targeting RNAs for Crop Protection

Tech ID: 32474 / UC Case 2021-843-0

**OTC Website** 

## BACKGROUND

Fungal pathogens are a threat to global food security and can cause crop yield losses of up to 20% along with additional post harvest product losses of up to 10%. Currently, resistant strains of fungi to every major fungicide used in agriculture have been identified. In order to continue to safeguard global food security, novel strategies for combating fungal pathogens must be developed. Recent advances to reduce crop yield and product loss include Spray-Induced Gene silencing (SIGS), where antifungal RNAs are applied to plant material through spray application.

### **BRIEF DESCRIPTION**

Prof. Hailing Jin and colleagues from the University of California, Riverside have developed novel vesicle formulations to deliver antifungal siRNA as a spray so that crop damage and crop loss is minimized. These vesicle/siRNA formulations are used in Spray-Induced Gene silencing (SIGS) approaches to protect crops and post-harvest plant material from fungal pathogens and other pests. This new formulation is an eco-friendly, effective, and cost-efficient alternative to traditional pesticides, and offers a way to target specific pathogen genes without the need for generating a GMO crop.



lettuce leaves and rose petals compared to the water and control (YFP-dsRNA) (non-specific target sequence) treatments.

## APPLICATION

To protect crops and post-harvest plant material from fungal pathogens and other pests.

## PATENT STATUS

#### Case

**CONTACT** Rekha Chawla rekha.chawla@ucr.edu tel: .

### **OTHER INFORMATION**

**KEYWORDS** fungicides, RNAi, crop yield, spray, vesicle

**CATEGORIZED AS** 

Agriculture & Animal Science

Chemicals

Other

RELATED CASES 2021-843-0, 2015-053-0, 2018-132-0

Contact Us

Permalink



Request Information

Find Technologies

Published Application

20240268396

2021-843

08/15/2024

# University of California, Riverside

Office of Technology Commercialization

200 University Office Building,

Riverside,CA 92521

otc@ucr.edu

https://research.ucr.edu/

Terms of use | Privacy Notice | © 2021 - 2024, The Regents of the University of California