Isolation and Characterization of Bacterial Isolates Collimonas SP.CAL1 AND CAL2

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ABSTRACT

Researchers at the University of California, Davis have developed Collimonas bacterial isolates Cal 1 and Cal 2 that demonstrate strong antifungal activity against economically important plant pathogens.

FULL DESCRIPTION

This invention details the isolation and thorough characterization of two unique Collimonas bacterial strains, Cal 1 and Cal 2, from California soils. These strains exhibit distinctive antifungal profiles that differ from previously known Collimonas species. Isolated through enrichments of soil samples, these bacteria have been confirmed via molecular assays and 16S rRNA gene sequencing. Testing revealed potent antagonistic effects against a broad range of fungal and oomycete plant pathogens, including those causing sour rot of grapes and other economically significant diseases.

APPLICATIONS

- Development of biocontrol products for agriculture. Integrated pest management in fruit and vegetable farming.
- Vineyard disease management, specifically sour rot control.
- Soil health enhancement through microbial inoculants.
- Research and development of microbial antifungal agents.

FEATURES/BENEFITS

- Inhibits multiple fungal and oomycete plant pathogens effectively.
- Exhibits unique antifungal profiles distinct from other Collimonas strains.
- Supports regional agriculture by originating from native California soils.
- Ensures precise identification through thorough molecular characterization.
- Reduces reliance on chemical fungicides as a potential biocontrol agent.
- Controls fungal diseases affecting economically important crops.
- Provides a sustainable alternative to chemical pesticides in agriculture.
- Manages sour rot and other fungal infestations in vineyards and crops.
- Reduces crop losses caused by fungal pathogens resistant to conventional treatments.

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OTHER INFORMATION

KEYWORDS

agriculture, antifungal, biocontrol, bacterial isolates, Collimonas, fungal pathogens, plant disease control, soil bacteria, sustainable agriculture, viticulture

CATEGORIZED AS

- **Agriculture & Animal Science**
  - Plant Traits
- **Biotechnology**
  - Other
- **Materials & Chemicals**
  - Agricultural

RELATED CASES

2016-065-0

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Bacterial Biocontrol of Plant Pathogens

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