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### **Request Information**

# **Biological Production of Industrial Small Esters**

Tech ID: 24008 / UC Case 2013-827-0

### ABSTRACT

Microorganism engineered to produce various C4-C8 esters.

### **FULL DESCRIPTION**

Researchers at the University of California, Davis have produced small esters (C4-C8) through the manipulation of microorganisms. A genetically modified microorganism was used to produce C4-C8 esters. These esters are used in nitrocellulose lacquers, coatings for plastic substrates, high solids coatings, artificial flavouring and fragrance.

Compared to the current ester production methods which heavily depend on petroleum, this invention allows for environmentally friendly and sustainable production from a renewable source. Additionally, these esters have limited solubility in water, generating a bilayer that allows for continuous microbial production and easy purification.

### **APPLICATIONS**

- Lacquers solvents
- ▶ Ingredient in painted coatings
- ▶ Food flavorings (orange, pineapple, pear, banana)
- Cosmetics
- Fragrances

### **FEATURES/BENEFITS**

- ► Environmentally friendly
- Continuous production
- Easy purification

### **RELATED MATERIALS**

Two-dimensional isobutyl acetate production pathways to improve carbon yield (Nature Communications) -06/25/2015

- ▶ Engineering new routes to biochemicals 06/25/2015
- PCT patent application PCT/US2014/053587 03/05/2015
- ▶ Sweet smell of sustainability: renewable sources for artificial scents 03/10/2014
- Expanding ester biosynthesis in Escherichia coli (Nature Chemical Biology) 03/09/2014

### **PATENT STATUS**

Country	Туре	Number	Dated	Case
United States Of America	Issued Patent	10,174,348	01/08/2019	2013-827

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Permalink



### **INVENTORS**

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### OTHER INFORMATION

#### **KEYWORDS**

### biocatalysis, esters,

microorganism, fragrance,

food flavoring, fruit

flavoring, cosmetic,

lacquer, paint, thinner,

coating, genetically

engineered microorganism

### CATEGORIZED AS

### Biotechnology

Food

- Industrial/ Energy
- Other

## Materials &

### Chemicals

Chemicals

**RELATED CASES** 2013-827-0

## ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

Using Escherichia coli to Produce Human Milk Oligosaccharide Lactodifucotetraose

- ▶ Biological Conversion of Ethylene to n-Butanol and Other Chemicals Using E. Coli
- Renewable Energy Synthesis System

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