

Artificial Intelligence Used for Rhamnolipid Biosurfactant Applications

Using drones, robots, and algorithms to eliminate micro-organisms

TAMPA, FL, USA, March 10, 2023

/EINPresswire.com/ -- De3.ai and

[Biosurfactants](#) LLC plan on building a Rhamnolipid Biosurfactant facility in Tampa, FL. Using [artificial intelligence](#) algorithms, De3.ai can determine the exact application to eliminate

contaminants and microbes from environments with no carbon footprint and no residual effects on the environment after application. Rhamnolipid Biosurfactants are chemicals secreted from bacteria that have many applications including breaking down the cell walls of pathogens.

Dr. Mehul Patel, a pathogen researcher and Joe Trebbe the managing director at Biosurfactants LLC, both with the De3.ai team, pending a successful fund raising campaign, plan on using Rhamnolipid production and application trade secrets to eliminate spores where the De3 microbe detection applications work together.

Rhamnolipid Biosurfactants (naturally produced in the environment) are just starting to gain recognition by replacing synthetic petroleum-based surfactants for everyday applications. Rhamnolipid when applied through drones and robots utilizing algorithms, will not over-treat contaminants and microbes leaving no toxic after-effect.

Use of Rhamnolipid

Rhamnolipids have applications across many industries, including pollution mitigation, energy, agriculture, food processing, and pharmaceuticals due to their biological capabilities and efficient surface.

- **Pollution Mitigation:** Rhamnolipids are used in environmental clean-up in water or soil by acting as biodegradable dispersants.
- **Enhanced Oil Recovery:** Rhamnolipids could replace chemical biosurfactants in traditional chemical recovery, which are routinely used in the extraction of crude oil.



OUTSMARTING THE SMARTEST PATHOGENS

DE3 Inc Logo

- Agriculture: Rhamnolipids can act as a natural and organic bio-pesticide against agricultural pests and can be a key ingredient in pesticide formulations.
- Food Processing: Rhamnolipids serve as an antimicrobial agent, capable of cleaning food products and reducing food spoilage.
- Pharmaceuticals: Rhamnolipids can be used to produce nanoparticles for drug delivery, and recent in vitro studies suggest they can inhibit the growth of many human cancer cell lines, making it a potential anticancer agent.

According to the National Institute of Health, Rhamnolipid Biosurfactants are a surfactant of biological origin. Micro-organisms, such as bacteria, yeasts, and fungi are known to produce various types of biosurfactants composed of sugars, amino acids, or polar functional groups.

Biosurfactants are attracting considerable attention since they represent ecological alternatives to their synthetic counterparts. They exhibit lower toxicity, and show stability at extremes of temperature, pH, and salinity.

Biosurfactants have a wide variety of structures, and can be produced from renewable feedstocks by a wide variety of microorganisms. Most importantly, the substances are biodegradable, making them environmentally friendly, green chemicals.

Company

Based in Tampa, FL, the company consists of an experienced team of scientific, mathematical, financial service, engineering, healthcare, military, information technology and marketing professionals, who are using their expertise to solve immense environmental issues. DE3 is led by Keith Louis De Santo, a serial entrepreneur, who has filed over 25 patents with the USPTO and WIPO for artificial intelligence, [machine learning](#), software program, and bio-surfactant applications. He is the first person to be granted a Rhamnolipid patent from the USPTO, which is at the core of DE3's technology.

The company welcomes discussions from journalists and investors to learn more about this emerging technology and how it can be used to build a cleaner and safer world.

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