



TECHNOLOGY

Modified Proteobacterial Enzyme for Industrial and Medicinal Applications

OVERVIEW

Background

Naturally derived and modified enzymes have been used for a variety of biological and non-biological applications. Sea weed and bacteria derived polysaccharide, alginate has been used in food as thickening or gelling agent, and as a stabilizer; alginate hydrogels have applications in the drug delivery and wound healing areas (used in bandages). Alginate can be broken down or processed by enzymes called alginate lyases. These enzymes may also be used for other applications like disruption of biofilms to aid antimicrobials (antibiotics).

Innovative Technology

Researchers at University of Maryland have developed a modified Proteobacterial enzyme, alginate lyase that can be used for a wide range of applications from biofilm disruption, bioremediation, and industrial food processing. The modified enzyme is capable of processing polysaccharides including, alginate. Researchers have employed codon-optimization techniques to ensure enhanced expression of this enzyme. The enzyme can potentially be used for metabolizing alginate in industrial food processing, disrupting biofilms in marine equipment, aiding antibiotic treatment in therapeutic and disrupting biofilms in medical devices like catheters for medicinal applications.

Advantages

- Enhanced expression of enzyme
- Effective disruption of biofilm in lab setting

Applications

- Food Processing
- Biofilm Disruption
- Therapeutic Applications
- Bioremediation

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Additional Information

INSTITUTION

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PATENT STATUS

Pending

LICENSE STATUS

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CATEGORIES

- Biologics
- Industrial Processing

EXTERNAL RESOURCES

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