



Expression System and Fermentation Processes For Overexpression Of Holo-Acyl Carrier Protein

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing bacterial plasmids that express the enzyme responsible for post-translational modification of ACP.

Overview

Acyl carrier protein (ACP) is a small lipid carrier protein involved in fatty acid biosynthesis and in the solubilization of fats to make them metabolically available. The molecule is difficult to obtain in pure form due to its need to be post-translationally modified. A number of expression vectors have been developed to produce an unmodified apoform of ACP; however, this form is toxic to cells.

The Invention

UW-Madison researchers have created eight bacterial expression plasmids from either *E. coli* or spinach, which express both apo-ACP and *E. coli* holo-ACP synthase, the enzyme responsible for the post-translational modification of ACP. Therefore, the plasmids allow completion of the required modification. The researchers' expression system enables the production of ACPs in high yields by using chemically defined minimal medium and specialized fermentation procedures.

Applications

- Large scale production of purified ACP

Key Benefits

- These constructs efficiently produce ACP on a large scale and will facilitate production of highly purified protein for research or commercial purposes.
- Can be easily modified to produce ACP from numerous sources, including bacteria, plants and other organisms
- Can be modified to provide specifically tagged proteins for customized uses

Additional Information

For More Information About the Inventors

- [Brian Fox](#)

Tech Fields

- [Research Tools : Microbial technologies](#)
- [Research Tools : Other research tools](#)
- [Research Tools : Synthesis & purification](#)

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