



Enhancing the Production of Foreign Proteins in Yeast by Overexpressing Endogenous Genes

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partners interested in developing a method of increasing the expression of foreign proteins in yeast.

Overview

Although the yeast *Saccharomyces cerevisiae* is often used to express foreign proteins for industrial or therapeutic uses, production of these heterologous proteins is far from optimal. Current methods of increasing protein expression in yeast have met with limited success.

The Invention

UW-Madison researchers have developed a method of enhancing the expression of foreign proteins in yeast. They identified five yeast genes that increase protein secretion. To improve the production of heterologous proteins, a yeast cell can be engineered to overexpress one or more of these genes. The genes work best to enhance the expression of proteins expressed at low levels due to low stability or folding efficiency.

Applications

- Expressing proteins for industrial or therapeutic uses

Key Benefits

- Increases production of heterologous proteins by *S. cerevisiae*
- Applicable to other yeast species
- Successfully used to enhance the expression of green fluorescent protein (GFP) and brain-derived neurotrophic factor (BDNF) and to increase the production of several single-chain variable fragment (scFv) antibodies in *S. cerevisiae*

Additional Information

For More Information About the Inventors

- [Eric Shusta](#)

Publications

- Wentz A.E. and Shusta E.V. 2007. A Novel High Throughput Screen Reveals Yeast Genes That Increase Secretion of Heterologous

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Tech Fields

- [Research Tools : Synthesis & purification](#)

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