

# PROM *your* OISE of TECH *your* NOLOGY

## Inventor

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## Technology

Production Methods of  
Glycoproteins in Plants;  
Glycoprotein Compounds

## Key Features

- O-glycosylation approach
- Modify transcription
- Increased expression of protein

## Key Benefits

- 100,000X scale
- Reduced time
- Reduced cost
- Improved half-life
- Reduced concern over contamination

## Contact

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## Technology Overview

Our technology improves the protein yield of plants by engineering post-translational modification and secretion signals. To achieve high yields in plants, all stages of gene expression are optimized, from transcription to protein stability.

Gene expression is a process that involves the translation of the information encoded in a gene into protein or RNA. Our method involves modifying the secretory pathway of transcription is a most suitable environment for folding and assembly, leading to higher yields. Specifically, our method involves promoter and polyadenylation site for high-level transcription modification. To increase protein yields, we include a glycosylation site and a secretion signal peptide in the recombinant protein, demonstrating significant increase in comparison to the expression of the same protein without the glycosylation site and signal sequence.

## Potential Fields of Use

The most beneficial application of the technology is with vaccines and related plant biotechnology. The worldwide vaccine market is \$10 billion (source: United Press International). Other markers for post-translationally modified proteins depend on the specific use the protein. For example, 2009 sales of Hepatitis C treatment Pegasys® (Peginterferon alfa-2a) reached over \$1.28 billion. The worldwide market for therapeutic antibodies is over \$15 billion, with Rituxan® alone having sales of over \$5.6 billion in 2009.

## Benefit Analysis

This invention has many advantages over traditional production methods

- Increased scale (up to 100,000 fold)
- Reduced time to produce vaccine or therapeutics
- Significantly reduced cost for large scale production
- Improved half life (confirmed by animal experimentation)
- Reduced concern over contamination

## Licensing Opportunities

A patent portfolio is in place. Licensing opportunities are available.

