

# Gene Delivery into Plant Cells for Recombinant Protein Production

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## Abstract

Gene delivery into plant cells for recombinant protein production is a rapidly advancing field in biotechnology and pharmaceutical research. This article provides an overview of the methods used to introduce foreign genes into plants, including *Agrobacterium*-mediated transformation, biolistic particle delivery, and viral vectors. It explores the applications of this technology in producing pharmaceutical proteins, industrial enzymes, and agricultural improvements. The challenges associated with gene flow and the need for regulatory frameworks are also discussed. Furthermore, the article highlights future perspectives, including advancements in gene delivery technologies and the potential of gene editing tools for precise modifications in plant genomes.

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**Received:** 01-July-2023, Manuscript No: jmpopr-23-103754, **Editor Assigned:** 04-July-2023, pre QC No: jmpopr-23-103754 (PQ), **Reviewed:** 18-July-2023, QC No: jmpopr-23-103754, **Revised:** 22-July-2023, Manuscript No: jmpopr-23-103754 (R), **Published:** 29-July-2023, DOI: 10.4172/2329-9053.1000184

**Citation:** Musaed C (2023) Gene Delivery into Plant Cells for Recombinant Protein Production. J Mol Pharm Org Process Res 11: 184.

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