

Innovative Therapeutic Protein Production in Chicken Eggs

ID: 2024-055

Executive Statement:

An advanced system leveraging chicken eggs for cost-effective and scalable production of therapeutic proteins.

Technology Overview:

This technology introduces a groundbreaking method for producing therapeutic proteins by genetically modifying chicken primordial germ cells (cPGCs) to express therapeutic proteins in egg whites. Utilizing Recombinase-Mediated Cassette Exchange (RMCE), this approach enables precise insertion of therapeutic gene cassettes into the chicken genome, allowing for the large-scale production of biologics in a cost-efficient manner.

Key Advantages:

- Significantly reduces production costs compared to traditional mammalian cell cultures
- Enhances production efficiency and scalability through the use of chicken eggs
- Facilitates easy purification of proteins due to their expression in egg whites
- Supports ethical and sustainable production practices
- Aligns with regulatory standards for biologics production

Problems Addressed:

- High cost and limited scalability of traditional biologics production methods
- Complexity and inefficiency in producing therapeutic proteins
- Environmental and ethical concerns associated with mammalian cell cultures

Market Applications:

- Large-scale production of biologics, including biosimilars
- Pharmaceutical companies interested in cost-effective protein production
- Transgenic animal research and development
- Drug design and development through strategic partnerships