

Bhujbal Knowledge City
MET's Institute of Pharmacy
Adgoan Nashik

INDUSTRIAL TRAINING AT GLENMARK PHARMACEUTICALS SINNER
(Three-Day Training on Respiratory Products Formulation and Evaluation)

Details of the training are as follows:

Conducted by: Glenmark Pharmaceuticals, Sinner

Participants: Dr. Santosh Chhajed, Mr. Sachin Gaikwad

Training Duration: 28/01/2025 to 30-01-2025 (Three Days)

Topic: Formulation and Evaluation of Respiratory Products (MDI, DPI, and Nebulizers)

Objectives of the Training

1. To understand the formulation techniques involved in the development of Metered Dose Inhalers (MDI), Dry Powder Inhalers (DPI), and Nebulizers.
2. To gain hands-on experience in evaluating the physicochemical and aerodynamic properties of respiratory formulations.
3. To explore advanced techniques in particle engineering and drug dispersion optimization for effective pulmonary delivery.

Training Highlights

Day 1: Introduction and Theoretical Framework

- ❖ Overview of respiratory drug delivery systems.
- ❖ Key formulation components: Propellants, excipients, and active pharmaceutical ingredients (APIs).
- ❖ Design and working mechanism of MDI, DPI, and Nebulizer devices.

Day 2: Formulation and Development

- Hands-on session on the preparation of MDI formulations, including selection of propellants and surfactants.
- Dry powder blending techniques for DPI formulations.
- Role of particle size reduction in optimizing drug deposition in the lungs.
- Nebulizer solution formulation and stability considerations.

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Day 3: Evaluation and Quality Control

- Demonstration of Aerodynamic Particle Size Distribution Analysis using Next generation Impactor and Andersen Cascade Impactor.
- Spray pattern and plume geometry analysis for MDI.
- Assessment of emitted dose and fine particle fraction in DPI formulations.
- Discussion on challenges in scale-up and industrial production of respiratory formulations.
- Interactive session on troubleshooting common formulation issues and ensuring batch-to-batch consistency.

The three-day training provided valuable insights into the development, evaluation, and regulatory aspects of respiratory drug delivery systems. The hands-on sessions enabled practical understanding of formulation techniques and analytical methods essential for ensuring product efficacy and safety. The knowledge gained from this training will significantly contribute to research and development efforts in inhalation therapy formulations.



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