

Formulation Considerations for Inhaled Products

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Abstract

Inhalation serves as a primary delivery platform of medicines for the treatment of respiratory diseases such as asthma and chronic obstructive pulmonary disease (COPD). It has also been explored for systemic delivery of compounds which require rapid onset or are unstable or poorly absorbed via other routes of administration. Significant progress has been made over the past few decades in the advancement of pharmaceutical inhalation science with the main focuses surrounding delivery devices, particle engineering, formulation, aerosol test methodologies as well as therapeutic efficacy evaluation. This has led to an improved understanding for how *in-vivo* efficacy correlates to *in-vitro* product performance and, consequently, the enhancement of therapeutic efficacy through improved inhaled product performance. This presentation provides background on three major inhalation delivery systems, i.e. metered dose inhaler, dry powder inhaler and nebulizer and in depth reviews on the formulation approaches applicable to these dosage forms.