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Title: Characterizing Aerosolization and Deposition of Nanoparticles for Air-Liquid Interface Exposed 16HBE Cells

Authors: Shekhar, Aditi

Keywords: Human respiratory

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Abstract: The Air-Liquid Interface (ALI) culture technique offers a physiologically relevant in vitro recapitulation of healthy and diseased human respiratory environment.

Combined with commercially available aerosol generation systems, this technique can be leveraged to develop a cell exposure system capable of directly depositing engineered aerosols, allowing for rapid drug delivery applications. Here, we attempted to establish methodologies for developing such a cell exposure system, utilizing the 16HBE cell line for an ALI model and a commercially available aerosol chamber to devise QCM-based detection methods and a fluorescence-based assay to quantify deposited aerosols. The results from this study may assist future investigations in assessing the accurate cell-delivered

dose of inhalable therapeutics, particularly for influenza infections and cystic fibrosis.

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