

## **Particle Engineering- A literature review**

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## Literature Review

*Patel, B., Gupta, N. and Ahsan, F., 2015 Particle engineering to enhance or lessen particle uptake by alveolar macrophages and to influence the therapeutic outcome European Journal of Pharmaceutics and Biopharmaceutics, 89, pp.163-174*

The journal emphasizes on the effects of the different alveolar macrophages in protecting the human lung against airborne diseases of all types. The different recent advancements that have been made in the respective field points out that the macrophages play a significant role in reducing the different inflammatory responses. The particle engineering concentrates on the various particle carriers that are being utilised for the purpose of delivering drugs to the macrophages that are present in the lungs of the individual. The journal summarizes the impacts of a series of the physicochemical processes that are related to the particle engineering precisely shape, composition and the size of the particles.

*Cun, D., Wan, F. and Yang, M., 2015 Formulation strategies and particle engineering technologies for pulmonary delivery of biopharmaceuticals Current pharmaceutical design, 21(19), pp.2599-2610*

The recent trends and concepts of particle engineering aim at developing the efficiency of the pulmonary biopharmaceutical technologies. The journal points out that the combination of recombinant proteins along with other nucleic acid bases is often useful in enhancing the health quality of the patients. The journal points out that the particle engineering can be effective enough in enhancing the pulmonary efficiencies to a great extent. It has been estimated that the application of these will play a significant role in reducing the different intrinsic as well as physiochemical properties of the materials.

*R Williams, D., 2015. Particle engineering in pharmaceutical solids processing: surface energy considerations. Current pharmaceutical design, 21(19), pp.2677-2694*

The past years have witnessed a considerable change as well as increasing importance of the particle engineering in the pharmaceutical industry. The journal emphasizes on the importance of the particle engineering particularly in the series of the different manufacturing operations such

as granulation, crystallisation that can be dangerous and hence needs to be controlled. The journal considers the importance of crystallisation in the different solids as well as the role and the performance of the DPIs in the entire process. The journal aims at understanding the importance of the performance of the particulate process and factors from the point of view of the surface energy.

## References

Cun, D., Wan, F. and Yang, M., 2015 Formulation strategies and particle engineering technologies for pulmonary delivery of biopharmaceuticals Current pharmaceutical design, 21(19), pp.2599-2610

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