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Type: Oral Presentation

Optimisation and characterisation of a dual porosity medical grade porous medium for personalised inkjet printed dosages applications

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Personalized medicine enables tailored therapy, best response, and lowest side-effects to ensure better patient care. By means of inkjet printing technology, personalized medicine can be provided precisely, efficiently and affordably. In this work, we introduce a methodology based on inkjet printing which uses a porous substrate as career for Active Pharmaceutical ingredient (API). The porous substrate needs to have certain properties to uptake the API fast, distribute it uniformity, and realize it based on desired profile. To meet these criteria, a set of experiments has been designed and conducted. A list of required ingredients, granulation and tableting methodology have been identified to produce a Dual porosity porous tablet which fulfills required abovementioned criteria as well as necessary mechanical strength before and after print. The pore network of the tablet was characterized to extract porosity, pore size distribution, connectivity, and permeability of the domain. Furthermore, the pore network of the tablet was extracted to be used in pore-scale two-phase flow simulation to study the movement of API inside the domain. The results of the model, yielded in appropriate printing process parameters.

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References

Time Block Preference

Time Block B (14:00-17:00 CET)

Participation

In person

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