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ABSTRACT

Based on the concept of continuous manufacturing an end-to-end benchtop device was developed unprecedented for the production of solid drug dosage forms by connecting flow synthesis and formulation via electrospinning (ES). Together with the optimized two-step continuous-flow synthesis of acetylsalicylic acid (ASA) a water-soluble polymeric excipient (polyvinylpyrrolidone K30, PVPK30) was introduced. The resulting polymeric solution could be readily electrospun into solid nanofibers with high purity in one single step due to the excellent yet gentle drying effect of ES. The ASA-loaded fibers were electrostatically deposited onto a water-soluble pullulan sheet and the obtained double-layered films were continuously cut into orally dissolving webs (ODWs) as final dosage formulation. The synthesis as well as the dosing of the fibrous films were monitored by Process Analytical