Development of a continuous manufacturing method for the

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Technology description

Nanomedicine is a high risk, high return market and has enjoyed unprecedented growth over the last five years. The global nanomedicine market was valued at $135 billion in 2015 and has a predicted annual growth rate of over 10%, leading to a projected value of $220 billion by 2020. Nanomedicine not only holds significant market value but its applicability in healthcare is widespread. In particular, patients suffering from cardiovascular disease, neuro degenerative disease, diabetes, cancer and inflammation have benefited from improved clinical care as a result of advances in nanotechnology. However despite this, nanomedicine provide many technical and business challenges preventing full adoption of this delivery strategy, of which, high cost and complexity associated to manufacturing using solvent approaches, are preventing the implementation of nanomedicine in both pharmaceutical and biopharmaceutical industries.
In comparison, COMmAND offers an alternative and previously unreported approach to the current water/solvent-based batch processes. The COMmAND platform enables multiple disconnected steps to be transformed into a one-step production method capable of operating continuously. As a result, COMmAND offers both scale-down and scale-up production of nanomedicines at much cheaper cost, thus significantly reducing the transition time from therapy to the patient. Furthermore, as we progress this technology we aim to make COMmAND a true lean manufacturing platform incorporating Process Analytical Technologies offering advanced control of industrial nanomedicine production.

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