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Continuous downstream processing of a monoclonal antibody using Periodic Counter Current Chromatography (PCC) and Straight Through Processing (STP)

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There is an increased interest to perform process intensification in order to reduce costs and improve throughput in the development and production of monoclonal antibodies (MAbs). One solution to these demands can be to implement continuous or semi-continuous downstream processing. New emerging technologies such as periodic counter-current (PCC) chromatography and straight through processing (STP) are entering the market. Here, these two technologies were evaluated in a continuous three step chromatography MAb process. The capture step was performed with protein A media (resin) on a 3 column PCC chromatography system followed by two polishing steps which were connected in series with an in line conditioning step in between. The three step process was performed using MAb from fed-batch cell culture. Results will also be presented based on the purification of MAb from a perfusion cell culture using PCC setup for the capture step.