Enabling CIMmultus DEAE columns at scale for plasmid DNA capture

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Increasing demand of highly purified plasmid DNA (pDNA) at gram scale asks to have fast, robust and scalable workflow to capture pDNA from cell lysates. With the aim to develop a process that meets those criteria we initially did screening experiments and tested various resins, columns and membranes suitable for pDNA capture. Our initial results showed that CIM multus DEAE monolith columns offers most promising results in terms of high binding capacity for pDNA, high working flow rates and user-friendly usage in general, as columns are prepacked, easy to use and scale up. In this presentation we are going to talk about:

- resin and membrane screen study data
- development work that has been done to enable monolith columns to work with internal AstraZeneca's pDNA constructs and deliver high purification yields maintaining high pDNA purity
- scale up results where purification scale was increased from 1 to 800mL
- scientific challenges that were experienced throughout the development process
- solutions that were applied to solve or maintain those challenges across the batches