

430b Isolation and Purification of a Pharmaceutically Active Secondary Metabolite Via Solid Phase Extraction

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Solid phase extraction (SPE) is an important, widely used process step in the early purification and concentration of natural products. Initially, product concentrations in the fermentation broth are dilute, often much less than 1 g/L. To extract the product of interest from the fermentation cells into the liquid phase, the first step is addition of a water-miscible organic solvent, which further dilutes the stream. After removal of cell debris via centrifugation or filtration, an SPE step is often implemented. The parameters chosen for the execution of SPE can have a dramatic effect on the productivity and yield of the process. This study, at lab scale, investigated SPE for a secondary metabolite from a fermentation onto a brominated styrene based resin. Experimental parameters, including solvent concentration, feed pH, and elution strength were varied systematically to optimize the overall productivity of the process. The optimized process was then successfully scaled to the pilot plant.