

### Solid-Phase Refolding Technologies in Biopharmaceutical Protein Processing

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We have developed a several interesting process based on the solid-phase technology. "Solid-phase refolding" of inclusion body proteins uses ion exchange resins to adsorb denaturant-dissolved inclusion body. As the denaturant is slowly removed, the protein refolds into a native structure. The refolded protein can be eluted by a conventional elution technique. This concept was extended to "EBA-mediated refolding," in which the denaturant-dissolved inclusion body in a whole cell homogenate is adsorbed to a STREAMLINE matrix as cell debris are removed by the EBA (expanded bed adsorption) action. The adsorbed protein follows the same refolding steps. This process shows the potential to improve the refolding yield, reduce the number of processing steps and the processing volume and time, and thus improve the overall process economics significantly. In this presentation, the background and the processing details involved in these applications will be discussed.