

## Recent News

### **September 2006: Merck gives presentation at 232<sup>nd</sup> ACS National Meeting in San Francisco, CA.**

Bioprocess on a deck: An automated microscale chromatographic purification to rapidly evaluate *Saccharomyces cerevisiae* fermentation performance in the optimization of Hpv virus-like particle expression Marc D. Wenger, marc\_wenger@merck.com, Pete DePhillips, Colleen E. Price, and Daniel E. Bracewell. Bioanalytical Development, Merck & Co, West Point, PA 19085 The optimization of fermentation processes for protein expression requires maximizing yield while maintaining the integrity of the purified product. Fermentation performance is typically assessed by analyzing the crude lysate, although post-fermentation titers do not always trend with purification yields and final product quality. This arises as fermentation variables interact with downstream processes, as is the case for recombinant human papillomavirus (HPV) virus-like particles expressed in *Saccharomyces cerevisiae*, where the assessment of fermentation process performance requires a two-step chromatographic purification. To increase throughput, the cell lysis and chromatography steps were miniaturized 1000-fold using adaptive focused acoustics and micro-pipette columns, which offer a robust format for automation. The automated microscale purification enabled trial fermentation processes to be rapidly evaluated for purification yield and product quality. Moreover, the reduced sample volume requirement allowed feedback on fermentation time points. In doing so, a significant improvement in the efficiency of the HPV fermentation optimization was achieved.

The 232nd ACS National Meeting, San Francisco, CA, September 10-14, 2006.