Automated High-Throughput Protein Purification with MagneHis™ Particles

ABSTRACT

High-throughput protein production facilitates the study of multiple families of proteins involved in various metabolic pathways. Purified proteins find innumerable applications in biochemical and immunological assays for therapeutic discovery and diagnostics. In order to generate purified proteins for these applications, we developed an automated high-throughput protein purification pipeline. The basic elements of this 96-well format pipeline include generating clones and expressing and purifying proteins. Cell growth and expression are performed in 96-well, deep-well blocks using liquid handling robots where necessary. We have completely automated the protein purification process on the Biomek® FX using a magnetic bead-based affinity purification procedure. In this report, we briefly describe the process of robotic-affinity protein purification and present our purification results with forty-eight polyhistidine-tagged proteins. The pipeline consistently yielded greater than 10µg of protein with ~90% purity from 1ml cultures.

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