

Tecan the Pressure Off: A Fully Automated High-Throughput Mammalian Purification Platform Utilising Magnetic Bead Technology.

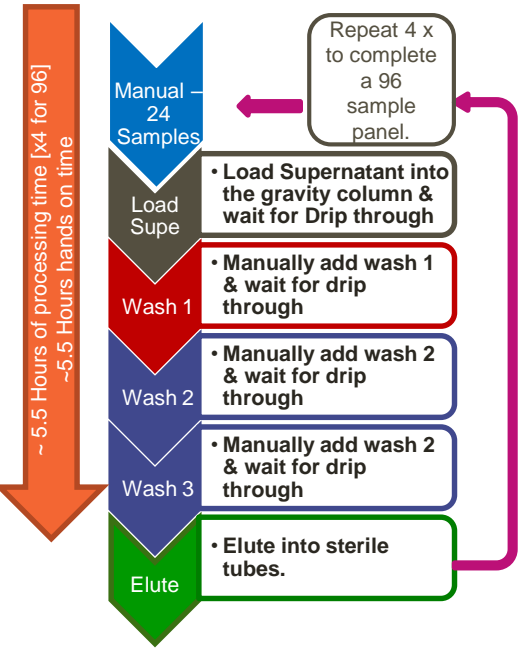


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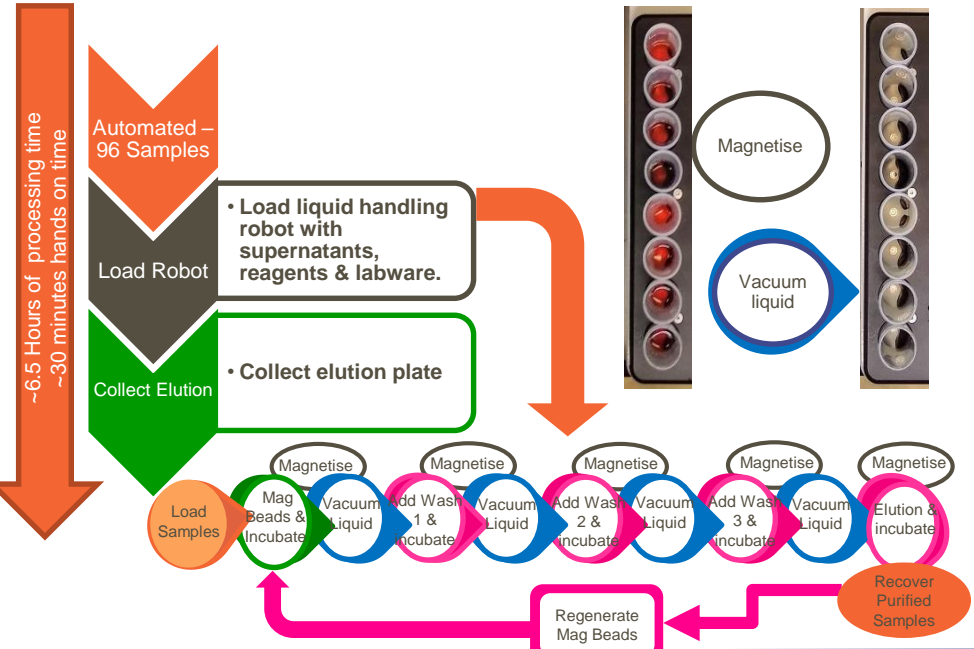
Recombinant proteins are routinely used in several different applications, ranging from therapeutic drugs, monoclonal antibodies or clotting factors, to diagnostic applications or research tools. The production of high quality recombinant proteins has remained a challenging and time consuming process in drug discovery due to the diversity of the protein reagents required across the pharmaceutical industry. Recent advances in protein production have included the application of high-throughput methodologies that aim to improve cycle times, as well as the quality of the protein produced. Gravity columns have been widely used as a method of protein purification for many years. However, the methods are only ideal for low volume cultures and are time consuming, labour intensive and difficult to automate. In the last five years, magnetic bead technologies have become more readily available with different chemistries and affinity ligands. In particular, the nickel magnetic resin has a capacity of 10mg of HIS-tagged protein per mL of magnetic bead, ideal for scaling up supernatant volumes and reducing cycle times. The advancement of magnetic bead technology has enabled the development of automated liquid handling systems for protein purification.

We aimed to develop a modernised, fully automated protein purification platform that supports high-throughput mammalian protein production, reduce protein production cycle times and increase productivity in drug discovery.

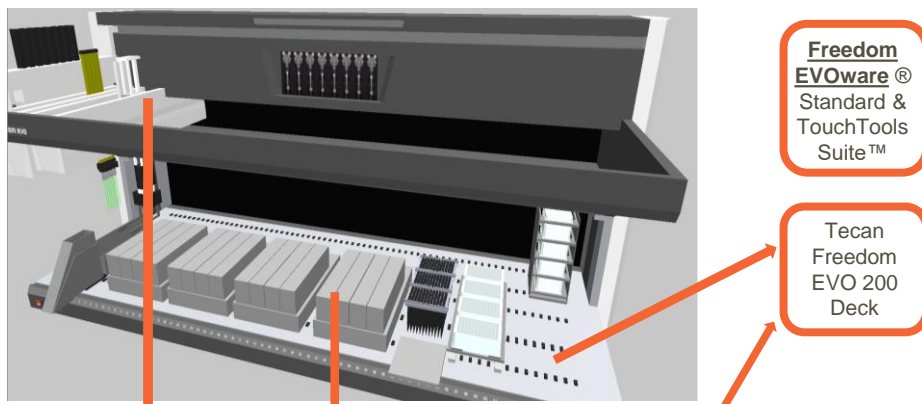
Manual Purification



Automated Purification



Tecan High-Throughput Liquid Handling Platform



Freedom EVOware[®] Standard & TouchTools Suite[™]

Tecan Freedom EVO 200 Deck

Optimised **bulk dispense** via multi-valve system

Vacuum manifold for fast removal of supernatant and wash.

Multiple HSM devices [Heat; Shake; Magnet]



~ 60% reduction in process time
 ~95% reduction in hands on time.

SDS-Gels & Heat Map [A280 results] of a 96 Sample Panel Purified on the Tecan/HSM.

