

# **High Throughput Screening of Selectivity for Protein Purification**

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Protein purification is a very important part of any biopharmaceutical manufacturing process and this part takes most money and efforts. Generally, chromatographic techniques are used in a very wide range in protein biotechnology and related fields, both in academia and industry. Thus, there is a large demand for high throughput screening methods.

In order to reduce the cost and effort for chromatography screening, miniaturization is performed using 96-wells plates provided by the GE Healthcare Company. This high throughput screening (HTS) method allows the screening of different conditions in one experiment.

The number of wells in the plate means that one can screen up to 96 conditions in a miniaturized form instead of doing the experiments in a larger scale, thus saving money, effort and reducing sample usage. The different conditions (e.g. pH, salt concentrations) can be screened in parallel, i.e. in the same experiment.

Furthermore, the plate experiments can be automated using laboratory robots which could save even more time and effort in addition to increasing the accuracy. The experiments performed used three standard proteins analyzed by two approaches. Both approaches were compared to each other and scaling up using larger columns was also performed. The results obtained from the plate experiments were very well correlated to the column experiments indicating that both approaches are working well for the screening of chromatographic conditions in the process development of protein products.

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