

## Advanced HPLC Provides Rapid Screening Method Development of Peptides and Oligonucleotides in Drug & Vaccine Discovery

Dr Gennaro Dichello, Biopharma Group

A new era has emerged in HPLC witnessing multiple separation channels merged into single dynamic systems. This approach is now rapidly demonstrating how advantages are not limited to increasing product throughput alone. This article reviews the latest developments of the Sepiatec Sepmatix parallel HPLC system range.

Biomolecules, particularly peptides and oligonucleotide derivatives, are increasingly being utilised throughout medicine. Notably at present, this includes global efforts towards the production of Covid-19 vaccines. Accordingly, requirements for the identification, isolation and purification of potential therapeutic products have increased. Although analytical and preparative HPLC are considered fundamental techniques for these purposes, their limited efficiency can result in significant commercial challenges.

Sepiatec Sepmatix HPLC systems incorporate an innovative strategy which enables optimisation of key parameters that contribute towards overall efficiency.

- Eight individual separation columns are integrated within a single instrument.
- Each separation channel is equipped with a dedicated UV, DAD or ELSD detectors.
- A single HPLC pump combined with patented flow-control technology enables precise operation of all eight separation channels simultaneously.

As a result of these system configurations, throughput is enhanced eight times over. Investigating concurrent experimental setups enables rapid method development with direct real-time comparison. Optimal product separation is attained, with each channel contributing towards the screening process. Together, these factors significantly reduce operating times, enhancing discovery.

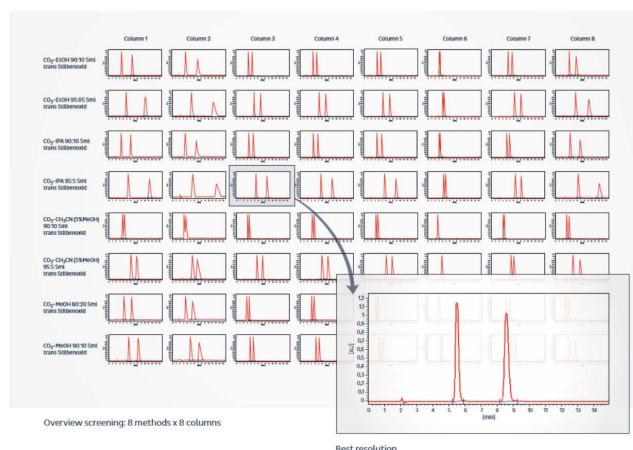


Figure 1: Chromatograms obtained from Sepmatix operating under eight distinct HPLC conditions simultaneously

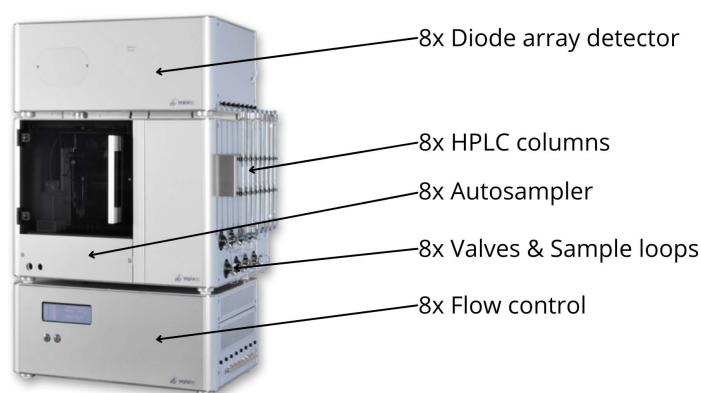


Figure 2: Sepiatec 8x column Sepmatix screening HPLC system

Operating and maintaining eight individual HPLC instruments would usually be challenging, even for experienced scientists. Sepmatix parallel HPLC systems however dramatically reduce this labour and can be managed by a single user. Additionally, with eight separating channels the time-consuming necessity to repeatedly change between HPLC columns is overcome. Facilitating the management of this increased operational output is achieved using integrated plug-and-play software.

Combining multiple HPLC separation channels within a single system also significantly reduces required utilities and working space in a lab. Compared to eight individual HPLC instruments, Sepmatix provides an 80% reduction in space and a 30% decrease in operating costs.

If you are acquiring or replacing existing HPLC instruments, consider the advantages of Sepiatec Sepmatix parallel HPLC. Experienced specialists are available at Biopharma who will be able to assess your requirements and provide a solution bespoke to your processing needs; get in touch today or visit our website.