

Diversify Your Analysis with HPLC

Broughton Laboratories Broughton Laboratories Ltd. has come a long way since the installation of its first two High Performance Liquid Chromatography (HPLC) systems back in 2006 when the company first started operations. These were the first two Dionex Ultimate 3000 models installed in the UK. As we have grown and developed as a company, so too has the need for 'future proofing' our HPLC systems to ensure we can always exceed our customer's expectations and continue to deliver against increasing demands. We continue to invest in providing the most up-to-date techniques that will keep us on the cutting edge of technology.

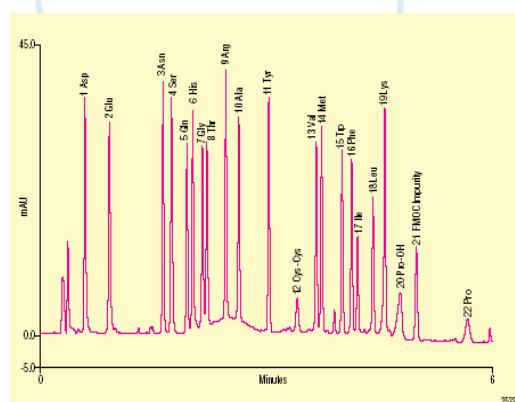
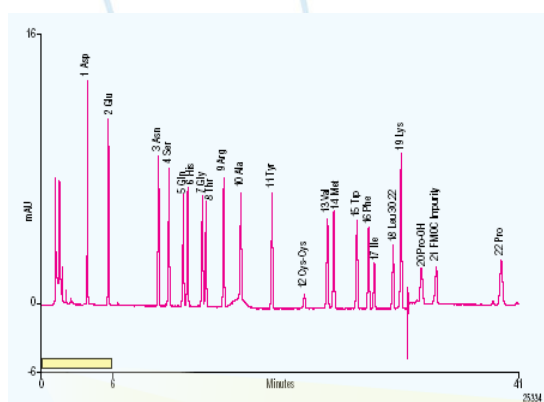
With our newest HPLC system installed and up and running, we now offer a wider range of techniques, including fluorescence and diode array detection along with Ultra High Pressure Liquid Chromatography (UHPLC). We can now offer a great deal of variety when it comes to sample analysis. We continue to source our HPLC systems from Dionex ensuring the highest quality standards are maintained and thus making training in the use these systems a lot more efficient. Our analysts have more time to spend on core business activities, such as further development, analysis and internal efficiency and quality projects.

Another recent area of investment for Broughton Laboratories Ltd. has been in Ultra High Pressure Liquid Chromatography (UHPLC). This, as it sounds, uses higher pressures than normal HPLC and can produce results in much smaller time frames therefore reducing our client's product time to market. There are many different variables that make this type of HPLC possible including columns, fittings and seals that can withstand higher pressures.

The difference in columns used in UHPLC is the main reason for the reduced run times and higher pressures. The higher pressures are related to the smaller particle size of the stationary phase. The reason for the smaller particle size is to do with separation efficiency and smaller particle sizes give better separation. This separation is so important because of the shorter run times and if the baseline separation is poor then resolution is lost, giving poor chromatography.

The difference in fittings (connecting the column to the system) is also of great importance. On our UHPLC system we have what are called 'Viper' fittings. These are invaluable as they reduce the 'dead volume' (the space between the column and the tubing from the system) to almost nothing. These fittings help transfer the mobile phase and sample to the column as quick as possible and, as some methods only last a few minutes, this needs to be as efficient as possible. With these fittings coupled with new column technology (shorter columns to compliment the shorter run times), an overall more efficient analysis can be achieved.

All this can lead to run times being reduced by up to 50 times. So as you can imagine, having a method that requires a run time of 50 minutes being reduced to 60 seconds is a very attractive proposition to many businesses.



A sample of 21 amino acids, run time going from 41 minutes to 6 minutes

This means more samples can be analysed in a shorter time frame while using less resource and less reagents. This ultimately reduces costs, time and sample turnover for us, savings which we can then pass on to our customers.

Andy
Analytical Chemist