

## Sample concentration changes can effect retention time in HPLC - Primer

Yes, retention time can change with concentration changes. All separation processes follow a [Langmuir model](#) and when a column is overloaded the retention time will decrease.

Also, if the sample comes from a complex matrix as you inject more of the sample the other components can adsorb on the stationary phase and cause a change in retention time. The larger the sample injection, the greater are the chances that this can occur.

So in an application using two different amounts of sample one will see that the column is not overloaded or affected by the sample matrix.